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LOUISVILLE WATER WORKS

Costs of Pumping, of Laying Mains, of Filtration and of General Maintenance—Organization of the Business Department—Functions of the Several Sub-departments—Value of the Purchasing Department

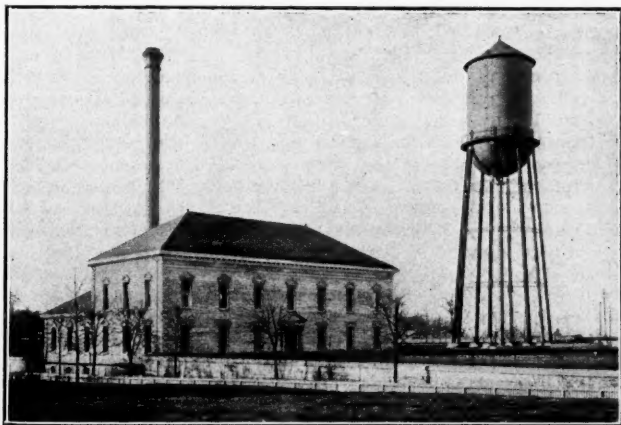
THE report for the year 1909 of the water works of Louisville, Ky., which are operated by the city under the title of the "Louisville Water Company, Inc.," contains an unusual amount of definite and interesting information, much of which we abstract in the following.

In 1907 the property of the company and its finances were both in bad shape. The pipes had never been cleaned, and reservoirs, pumping plants, and in fact the entire system needed a thorough overhauling. Since then the Water Board has made a number of improvements both in the physical plant and in the general service. A saving has been made in salaries alone of \$57,000 a year, although the actual business has increased 19 per cent. The distribution system has been generally overhauled and cleaned, new and more efficient pumping plants have been installed, the supplies are being obtained through a purchasing department by which a considerable saving is made in almost all items, and a very complete filtration plant is now purifying all water supplied to consumers.

The population of the city is about 260,000. The supply is pumped from the Ohio river, filtered and again pumped to a reservoir and standpipe. At the river pumping station are two Cornish pumps, one Leavitt pump and one Allis-Chalmers. The largest part of the supply is repumped at the Crescent Hill station, where are three Holly pumps. The river station lifts against a head of about 200 feet and the Crescent Hill station against 112 feet. The average consumption per day per capita during 1909 was 82, or 112 per consumer. Thirty per cent of the consumption was metered. The cost of supplying water per million gallons, figured on total maintenance, was \$28.04. The distribution system contains 337½ miles of

3-inch to 48-inch cast-iron pipe. During the year an average of 1.7 leaks per mile were discovered and \$41.46 per mile was spent in repairs on the distribution system. There are now in use 958 fire hydrants and 670 fire cisterns. The pressure on the mains varies from 40 to 75 pounds. There are now in use 33,731 service connections of an average length of 30 feet. Eight per cent. of the services are metered.

At the river pumping station the cost of pumping per million gallons last year was \$1.39 for labor, \$1.06 for fuel, 10 cents for oil and supplies and 89 cents for repairs and incidentals; a total of \$3.44. The year previous the cost of labor was \$2.33, of fuel \$2.73, of oil and supplies 13 cents, and of repairs and incidentals \$1.32; a total of \$6.51. This shows a saving of 47 per cent in the cost per million gallons between the two years. At the Crescent Hill pumping station the saving was 24 per cent, there having been a reduction of 30 per cent or more on all items except repairs, which were about double in 1909. "At the river station this decreased cost was attributable mainly to the installation of a modern high duty pumping engine supplanting the antiquated Cornish pumps, but a fair proportion of the saving at the river station, and all of the saving at Crescent Hill station, was due to a careful attention to details, to the elimination of surplus labor, and to the gradual reduction in the cost of fuel." The cost of laying mains of various kinds averaged 94 cents for 3-inch pipe, of which 52 cents was for material; 44 cents for 4-inch pipe, of which 31 cents was for material; 70 cents for 6-inch pipe, of which 50 cents was for material; 91 cents for 8-inch pipe, of which 70 cents was for material and \$2.29 for 12-inch pipe, of which \$1.75 was for material.



Crescent Hill Pumping Station and Standpipe



River Pumping Stations, General View

The average cost of installing $\frac{5}{8}$ -inch services during 1907 was \$15.20, which was reduced to \$11.98 in 1908 and \$11.05 in 1909. During the year the repairs to meters cost \$7,490.76, there being 2,642 in service.

The business of the department is handled by eight sub-departments, these being those of the chief engineer and superintendent, assistant chief engineer and superintendent, secretary, chief assessor, treasurer, storekeeper, buyer and auditor.

The purchasing department is in charge of C. S. Potter, who has the title of buyer. The department was placed in his charge January 1, 1908. As a result of the systematic method of purchasing materials for the department thus inaugurated there has been a general reduction in the cost of practically all the supplies. Among the prices paid in 1907 and in 1909, respectively, were the following: For one-inch curb cock, \$1.77 and \$1.40; 2-inch curb cock, \$5.65 and \$3.95; $\frac{5}{8}$ -inch corporation cock, 55 cents and 40 cents; one-inch corporation cock, \$5.57 and \$3.84; key boxes, \$1.71 and \$1.50; 6-inch pipe, \$32.00 and \$24.00; lead pipe, \$6.12 and \$4.68; pig lead, \$4.60 and \$4.30; sand, \$1.00 to \$1.25 and 85 to 90 cents per cubic yard. During 1907 coal was purchased costing from \$3.00 to \$3.25 per ton. Shortly after that several different kinds and grades of coal were experimented with and the department is now using 2 $\frac{1}{2}$ -inch nut and slack costing \$1.30 per ton. While this does not contain as much heating value, the difference in amount used is said by Mr. Potter to be so slight as to have little bearing upon the comparison of cost. Sulphate of alumina was purchased early in 1908 at 92 cents per 100 pounds, and the company furnishing it stated that an increase of price would be asked in 1909. By asking for competitive bids under the same specifications the alumina was obtained for 82 cents per 100 pounds, making a saving of approximately \$1,500 in the year's supply.

During 1909 a committee appointed for that purpose made an appraisal of the property of the company and stated as their opinion that the pipe system had suffered a depreciation of \$722,646, the river pumping station \$172,122 and the Leavitt engine in this station \$40,190 (this engine required the expenditure of \$12,876 for repairs in 1908 and 1909). One reservoir valued at \$72,904 they stated should be charged off the books entirely as of no value to the department. On the other hand, the real estate they estimated had appreciated in value \$27,263. The total value of the plant is estimated to be as follows: Real estate and buildings, \$315,437; pipe system and plant equipment, \$6,615,787; filter plant, \$1,959,791. The liabilities of the company include \$1,500,000 in bonds and \$334,000 in bills payable and other indebtedness.

The income of the company during the year was \$708,725.23, of which \$702,088.61 was for water services and the remainder for real estate rental, interest on funds and incidentals. In addition the department furnished water and fire protection to the city which they estimated to have a value of \$100,921, or about one-eighth of the entire service rendered to all consumers. The operating expenses totaled \$217,611.56, of which \$70,852 was for pumping and filtering, \$55,474 for distribution, \$56,888 for administrative expenses and the remainder for general expenses. This leaves a balance between income and operating expenses of \$491,113. Estimating a depreciation of 5 per cent on the filter and of 5 per cent on the pumping equipment and distribution system and none on the real estate or buildings; and interest at 4 per cent on the total valuation of the plant, or \$8,891,015, we have a total of about \$700,000 of fixed expenses, showing an apparent loss of about \$200,000. The department, however, introduces in their calculation no fixed expenses except the actual interest paid on notes and bonds, which was \$79,034, leaving a profit of \$412,079 according to their method of calculation.

The filter plant went into regular operation about August 1st, and the cost of operation for each of the five remaining months of 1909 was as follows: \$3.47 per million gallons, \$3.80, \$3.15, \$3.52 and \$3.90 respectively. Approximately 44 per cent of this was for coagulant, about 3 per cent for

wash water, 25 per cent for payroll of filter operators and 15 per cent for superintendent's and laboratory payroll; the remainder being for heat, light and power, supplies, repairs, etc. The amount of aluminum sulphate used varied from a minimum of 1.01 grains per gallon in November to a maximum of 1.61 in December. These costs of filtering do not include anything for interest and depreciation on the plant. If we place these at 9 per cent, which is certainly low, this would add about \$20.00 per million gallons to the cost, making the total cost about \$24.00 per million gallons.

During the year 64.11 miles of mains were cleaned at an expenditure of \$20,097.42. About 30 per cent of the total length was 6-inch pipe and nearly as much was 4-inch, the remaining 40 per cent being divided between 8, 12 and 16-in.

The auditor in his annual report describes quite completely the duties performed by each of the several departments. The auditing department examines, verifies and certifies all of the monthly reports made by the department heads and contracts for purchases and for pipe extensions; furnishes reports and statements covering assets and liabilities, income and operating expenses and special reports and estimates as they are called for; also submits each month a list of vouchers audited.

The duties of the other departments the auditor, Mr. John S. Morris, describes as follows, the full description being given as it may offer some suggestion toward the organization of similar departments elsewhere.

CHIEF ENGINEER AND SUPERINTENDENT'S DEPARTMENT

In this department there have been installed daily and monthly reports covering pumping, construction, repairs, unaccounted-for water, supplies, stock of materials, and payrolls, all of which have been checked and verified by the Auditing Department. The Engineer makes a monthly report of water pumped, coal used, sulphate of alumina used, and unaccounted-for water, which are checked and certified to by this department. The Auditing Department furnishes the Engineer with a copy of all statements sent to the Board, and also comparative monthly statements covering the operations of the two pumping stations. The Auditor confers and advises with the Chief Engineer and Superintendent on all charges made on the general books of the company affecting his department, and the Chief Engineer and Superintendent knows and approves of the distribution made of these entries and therefore he is in touch at all times with all matters affecting the accounting department of this company.

ASSISTANT CHIEF ENGINEER AND SUPERINTENDENT'S DEPARTMENT

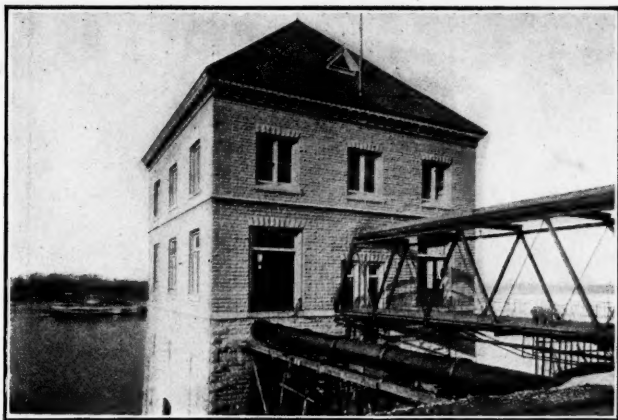
In this department all the construction and repair work is done, and accounts are kept showing the cost of same. Daily and monthly reports are made covering the entire operations of this department which are checked and verified by the Auditing Department. Books are kept showing the cost of construction and repairs, and statements are made to the Auditor each month of same. It took some little time to establish books that would give an absolute check between this department and the Auditing Department, but since September 1, 1909, a system has been installed by which an absolute check is made between these two departments. There are some other changes to be made in the near future which will tend to make this department more efficient in its accounting.

SECRETARY'S DEPARTMENT

In this department is kept all the accounts affecting the consumption of water. Ledgers are kept showing the account of each consumer and at any time a correct condition of the account can be ascertained. Records are kept in permanent books of all the billing, consisting of regular assessed bills, intermediate bills, building bills and meter bills, together with books accounting for the refunds made on same. In addition there is a ledger of consumers having service connections made, showing the bills collected therefor. There are auxiliary books which deal with the turning on and off of water, and recapitulations of monthly statements are recorded in permanent books and a list is filed of the unpaid bills on hand of every nature together with the bills themselves. These books are in balance with the general books of the company and all statements made to the Board are checked and verified by the Auditing Department. There is a perfect daily check established between the secretary's department and the treasurer's department and their accounts are required to balance as against each other daily.

CHIEF ASSESSOR'S DEPARTMENT

In this department the assessments and inspections of water services are made. Ledger assessments are kept which show the individual assessment of each consumer of water and any changes



RIVER PUMPING STATION NO. 2

that may occur during any period. Checks are established on assessments made which tend to detect any error. A complete balance of the assessment ledgers is taken at the time semi-annual bills are rendered, and all assessments are properly accounted for before the semi-annual bills are made. Daily and monthly reports are made which are checked and verified by the Auditing Department. The books of this department are well kept and are in balance.

TREASURER'S DEPARTMENT

This department deals with receipts and disbursements of the cash funds of the company, and no other department or employee is allowed to receive or disburse money. Books are kept which show in detail the receipts and disbursements of the treasurer and to what accounts they are either debited or credited. Proper receipts are given by the treasurer for all monies received, and vouchers are secured by him for all disbursements made. Daily cash balances are made by him and cash receipts are deposited in the bank each day. The treasurer reports to the Board weekly, monthly and quarterly, all receipts and disbursements and for whatever account. The cash book, daily balances, bank books, vouchers, and receipts and disbursements of the treasurer have been checked and verified by the Auditing Department and are found to be in balance with the general books of the company. Special care has been taken during the past year in auditing this department, and the auditing has been chiefly done by Mr. L. Cominger, special accountant, and all reports of the treasurer have been additionally certified to by him.

STOREKEEPER'S DEPARTMENT

The Storekeeper's Department is under the direct supervision of the Assistant Chief Engineer and Superintendent's Department; but on account of the magnitude of the details of this department, special books are kept and reports are made accounting for all supplies received and distributed by the storekeeper. These books and records show the details of every transaction and are kept in such a manner that they can be readily checked and verified. No material is received except upon proper authority and none is delivered except upon requisition. The reports of the storekeeper have been checked and verified and inventories have been taken showing the stock of material on hand, which have also been checked and verified. The books and accounts of the store keeper are in balance and correspond with the general books of the company.

BUYER'S DEPARTMENT

In this department no purchases are made or contracts entered into by the buyer except upon authority of the Board, President or Chief Engineer and Superintendent. The Board approves all contracts made by the buyer and requisitions are issued by the heads of the various departments upon him, but chiefly by the Chief Engineer and Superintendent. Any purchase over the sum of \$200.00 must have the authority of the President or the Chief Engineer and Superintendent. Books are kept which show a record of every purchase made and bills certified to therefor. The buyer is required to make all purchases in open market and to receive bids on all articles purchased where the amount justifies them. In the purchase of articles of very small amounts where no bids can be taken, more than one seller must be consulted before purchases are made. The buyer is required to certify to all vouchers issued by the auditor for purchases made, as to the amount of the purchase and the correctness of the price. All transactions of the buyer, consisting of contracts and bids, are checked by the Auditing Department before vouchers are issued. This department has been of great benefit to the business of this company, and the records show that purchases have been made of material used that have greatly reduced the cost of its operations.

TEMPORARY ROAD TREATMENT

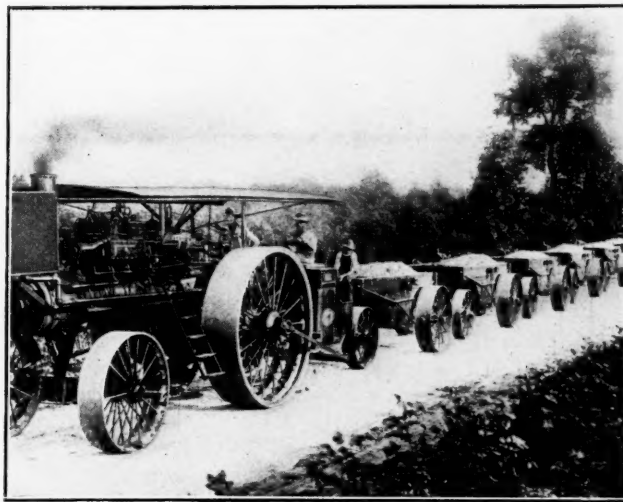
ROAD COMMISSIONER FREDERICK GILKYSO, of New Jersey, finds it desirable to treat the roads of that State on two general principles; one being to produce permanent improvement where the funds will permit, the other being to temporarily treat roads where sufficient funds are not available to permit of more permanent improvement. He realizes that work of the second class may lead to criticism, in that the work done may need to be gone over again every year until the road can be permanently improved; but it would appear that where permanent improvement is not possible such temporary improvement is far better than nothing at all, frequently saving the roads from utter ruin, which might come to them before rebuilding was possible. One method of so treating well worn macadam roads is to apply a thick asphalt oil mixed with sand. This makes a cushion similar to rubber and comfortable for horses, and also holds crumbling stone roads together. The sand unites very rapidly with the oil, but it requires some travel on the road to perfect the binder. Piles of sand are deposited by the roadside to be sprinkled over the surface whenever and wherever the oil shows itself there.

Reports of the Road Supervisor show that it costs about \$350 per mile to fill up ruts and depressions in worn macadam roads with loose stones. The sand oil method costs between \$600 and \$700 per mile, but gives a far more satisfactory job and is expected to wear for at least two years. Resurfacing the roads by mixing asphalt, sand and stone costs from \$6,000 to \$8,000 a mile.

ROAD BUILDING IN GEORGIA

By FRANK C. PERKINS

ONE of the most completed macadamizing plants in the country is owned and operated by DeKalb County in Georgia. The accompanying illustration shows the equipment, consisting of a hauling engine and six spreading dump cars loaded with 30 tons of crushed stone on the way from the crusher to Peach Tree Road which was being macadamized. The county has



ROAD ENGINE HAULING DUMP CARTS

two Port Huron high wheel hauling engines and trains of cars in use.

The quarry was located three-quarters of a mile from the nearest point being paved and 5 miles from the farthest point. The time taken by each outfit to deliver its 30 tons of crushed stone was one hour when the haul was 3 miles.

There were employed altogether, in the quarries, at the crusher and on the roadway, less than 60 men spreading about 200 yards of stone per day, where this method of hauling was employed. In a near-by county in Georgia, at the same time, 150 men were employed with 84 mules in spreading, by the old method, less than one-half that amount, thus clearly indicating the great saving in cost of construction by utilizing the latest labor-saving machinery in macadamized road construction.

MUNICIPAL MEAT SHOPS IN MEXICO

CONSUL L. J. Keena, of Chihuahua, in a report on the municipal meat shops in that Mexican city says, that the enterprise was undertaken on the initiative of the jefe politico (mayor), following a report from the Health Board that many diseases were in a great part due to the lack of sanitary conditions in the shops. The Consul states:

During 1909 the city completed and opened 20 sanitary meat shops, so located as to separate them from surrounding buildings by a distance great enough to insure good air and light on all sides. The shops are built of brick, one story high, and average 18 feet long by 12 feet deep inside. The floors are made of 8-inch square colored tile embedded in cement.

The equipment of each shop consists of a marble-topped counter, set of racks and hooks for hanging meat, white enameled washstand, and an electric fan. All windows are placed high in the wall and are barred and screened. The approximate cost per shop was \$1,000 and the average monthly rental is \$25. Several private individuals, convinced of the advantage of these shops, have built others identical in type and equipment, eight of which have already been opened to the public.

The slaughterhouses are subject to rigid inspection by municipal officers. Thirteen special wagons, owned by the city, are used to supply all meat shops. They are two-wheeled covered wagons with closed back and front and are lined with galvanized sheet iron. The sanitary inspection of the meat shops is under the general charge of the Health Board, but the managers and inspectors of the slaughterhouses and meat shops must inform the Mayor of any irregularities they may find.

OILING NEW YORK PARK ROADS

EXPERIMENTS with the use of oil on roads are being conducted by the Park Department of New York City in The Bronx under Chief Engineer Schenck, but the work has not reached a stage where it is possible to give definite results. The experiments were begun about two years ago, but owing to the opposition of citizens (two suits have been brought against the city for damage done, while others are threatened), they were dropped, only to be renewed again. Two grades of asphaltic oil have been tried, also crude petroleum, and an oil emulsified with 80 per cent of water. The use of 60 per cent of oil in the emulsion has given the best results so far as wearing qualities are concerned, but it is objected to by citizens, while that which contains 20 per cent oil maintains the roads dustless, but does not prevent them from traveling. Crude petroleum is secured at three cents per gallon in tank.

TRAFFIC CENSUS ON PARK ROADS

DURING August and again during October of last year the Metropolitan Park Commission of Boston had a census taken, lasting a week each time, of the traffic at five different points on the park and parkway drives. The results of these censuses are given in the accompanying table. The large preponderance of auto touring cars will be noticed, these constituting about 60 per cent of all of the vehicles recorded; next in number were auto runabouts, followed closely by single light carriages.

TRAFFIC CENSUS IN METROPOLITAN PARKS AND PARKWAYS

TRAFFIC RECORD, AUG. 22 TO AUG. 28, 1909, 7 A.M. TO 9 P.M.

OCT. 10 TO OCT. 16, 1909, 7 A.M. TO 9 P.M.

	Mattapan Bridge	Wellington Bridge	Malden River Bridge	Saugus River Bridge	Lynn Shore Drive, Corner Prescott Place	Totals	Mattapan Bridge	Wellington Bridge	Malden River Bridge	Saugus River Bridge	Lynn Shore Drive, Corner Prescott Place	Totals
Single light.....	1,878	1,612	772	844	1,710	6,816	1,909	1,091	422	482	1,052	4,956
Single heavy....	1,435	1,167	.....	.....	.....	2,602	1,610	1,148	.....	.....	.....	2,758
Double light....	113	91	23	18	239	484	110	146	25	43	81	405
Double heavy....	816	822	.....	.....	.....	1,638	925	625	.....	.....	.....	1,550
Auto runabout..	1,166	1,715	2,037	1,500	1,487	7,905	1,132	1,142	1,170	787	1,206	5,437
Auto touring....	3,601	5,605	5,284	6,740	8,489	29,719	3,738	4,303	3,075	3,698	3,146	17,960
Auto truck.....	.....	48	.....	.....	.....	48	.....	36	.....	.....	.....	36
Totals.....	9,009	11,060	8,116	9,102	11,925	49,212	9,424	8,491	4,692	5,010	5,485	33,102

WATER PURIFICATION AT LINDSAY

Ozone Treatment Reported on by Provincial Board of Health
—Description of Plant—Aspirators Reported Ineffective—Favorable Report by Expert

ABOUT a year ago a plant was installed at Lindsay, Ont., for purifying the municipal water supply by means of ozone on the Howard-Bridge system. The agreement with the town was that the water should be so purified as to have all taste, odor, color and harmful bacteria removed, the test to be made by an expert agreeable to both parties. An examination was made by an expert during the summer of 1909 on the strength of which the plant was accepted by the town. The Provincial Board of Health, which has supervision over the water supplies of the Province of Ontario (after some unfortunate controversy with the representative of the Howard-Bridge system) made an investigation of the plant through two representatives, Drs. Geo. G. Nasmith and Geo. R. Philp, chemist and bacteriologist respectively of the Board, which was continued from September 17 to February 1 of this year. Their report has just been published and contains, we believe, the first technical description of the plant which has appeared, from which we have prepared the following:

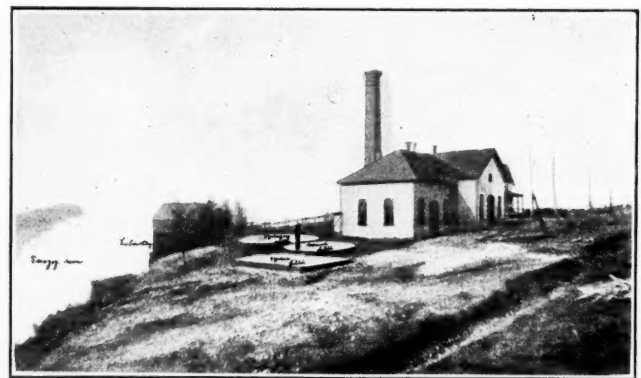


FIG. 1.—VIEW OF PLANT, LOOKING UP THE RIVER

The water of Lindsay is obtained from the Scugog River, which connects Scugog Lake, seven miles above, to Sturgeon Lake, seven miles below. The former is a shallow, mud-bottomed lake, with large weed beds, extensive marshes and rice fields. The river banks are low and marshy and the river bed itself is full of weeds and expands in places to include large areas of drowned lands with the usual accompaniment of fallen trees and partly submerged stumps. The lake has a very small drainage area, but considerable of its supply is said to be derived from springs. There are farms all along the river, but none of the barns or houses is very close to the banks. However, heavy rains or spring thaws would introduce possibilities of infection. The proximity of the farms with their manured fields and cattle were considered to probably account for the colon bacilli constantly found in the water. This water, as might be expected, contained large amounts of dissolved organic matter derived from decaying wood, weeds and other vegetable and animal life.

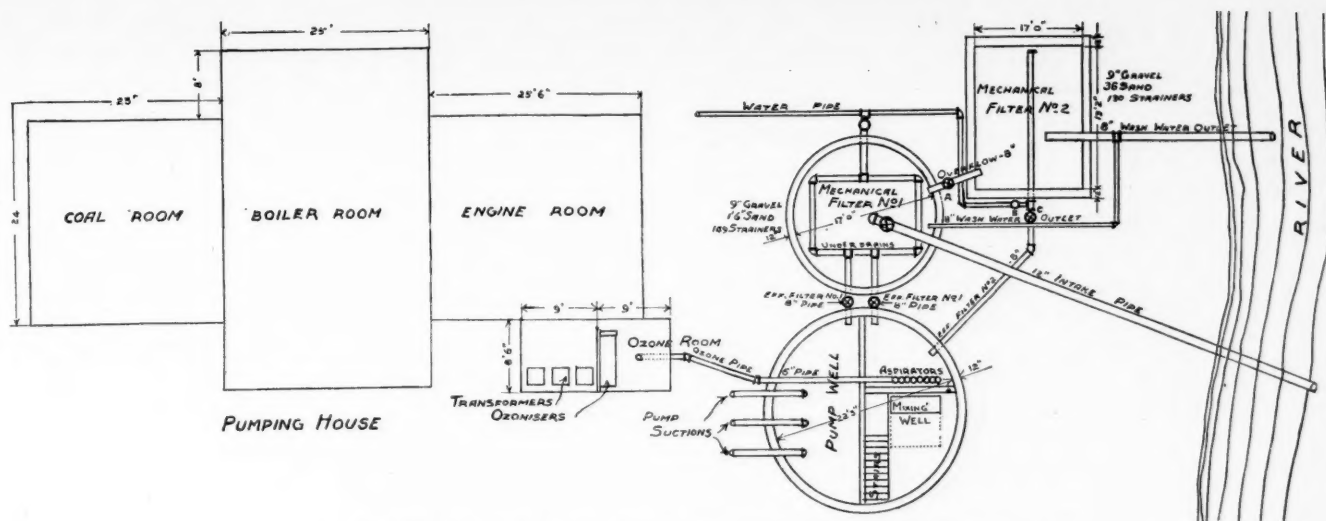


FIG. 2—GENERAL PLAN OF LINDSAY WATER PURIFICATION PLANT

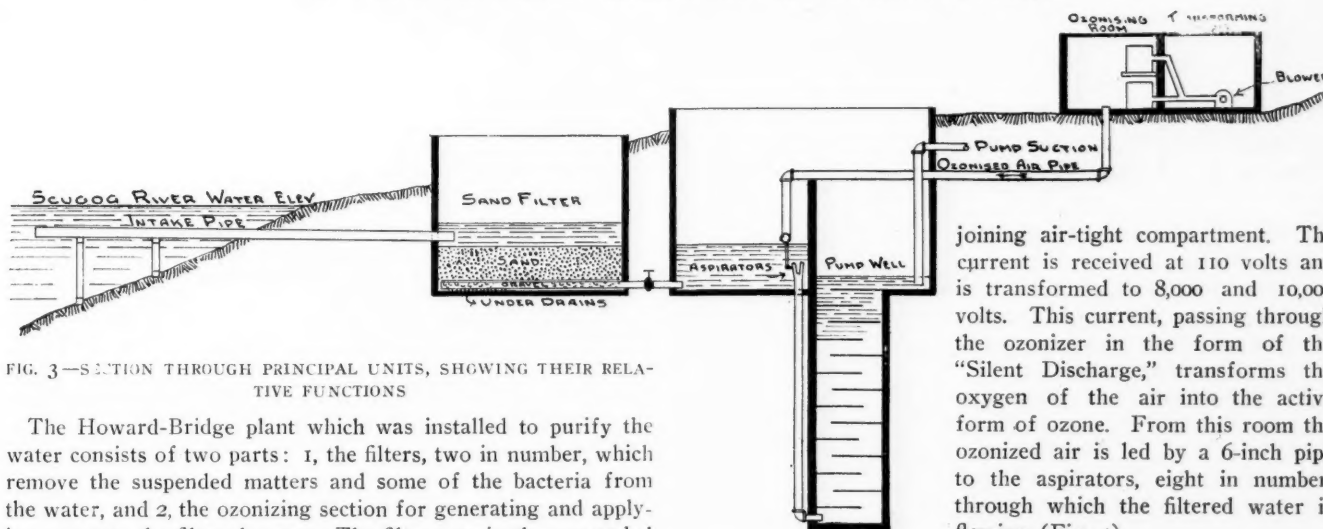


FIG. 3—SECTION THROUGH PRINCIPAL UNITS, SHOWING THEIR RELATIVE FUNCTIONS

The Howard-Bridge plant which was installed to purify the water consists of two parts: 1, the filters, two in number, which remove the suspended matters and some of the bacteria from the water, and 2, the ozonizing section for generating and applying ozone to the filtered water. The filters strain the suspended matter from the water; the ozone should literally burn up all the oxidizable matters, including the bacteria, still left in the water and, when carried to the ultimate conclusion, leave a water free from color, odor, taste and pathogenic organisms.

Figures 2 and 3 will show at a glance the relationship of the various parts of the plant.

The filters are of the type called rough mechanical filters and are supposed to merely remove the greater part of the suspended matter and clarify the water before submitting it to the principal process of ozonization. No coagulants are used in connection with these filters and the filtered water is usually quite clear.

The round filter was in use as a roughing filter before the present system was installed; the square filter was added in order to make the filtration more efficient than it had been. The round filter contains 16 inches of Sturgeon Lake sand over 9 inches of gravel; the square filter contains 30 inches of New Jersey sand upon 9 inches of gravel. These two units filter about half a million gallons of water per day, according to the Water Commissioners' report of the last three years.

The water runs by gravity from the river, a few feet away, into the filters, upon which a head of from $1\frac{1}{2}$ to 3 feet is maintained, the head depending upon the level of the river. The filtered water is received through Irwin patent sand valves, which seem to have worked very satisfactory, into pipes which carry it into the filtered water chamber. Here the water flows through the aspirators and is supposed to entangle a sufficient amount of ozone to purify itself.

The apparatus for generating and delivering the ozone is situated in the pump house. In the transformer room there is a blower which is supposed to draw the air from outside and blow it through the ozonizers, two in number, placed in an ad-

joining air-tight compartment. The current is received at 110 volts and is transformed to 8,000 and 10,000 volts. This current, passing through the ozonizer in the form of the "Silent Discharge," transforms the oxygen of the air into the active form of ozone. From this room the ozonized air is led by a 6-inch pipe to the aspirators, eight in number, through which the filtered water is flowing (Fig. 4).

The falling water, entangling this ozone, carries it down to the bottom of a well, 22 feet deep, and then flows backward and

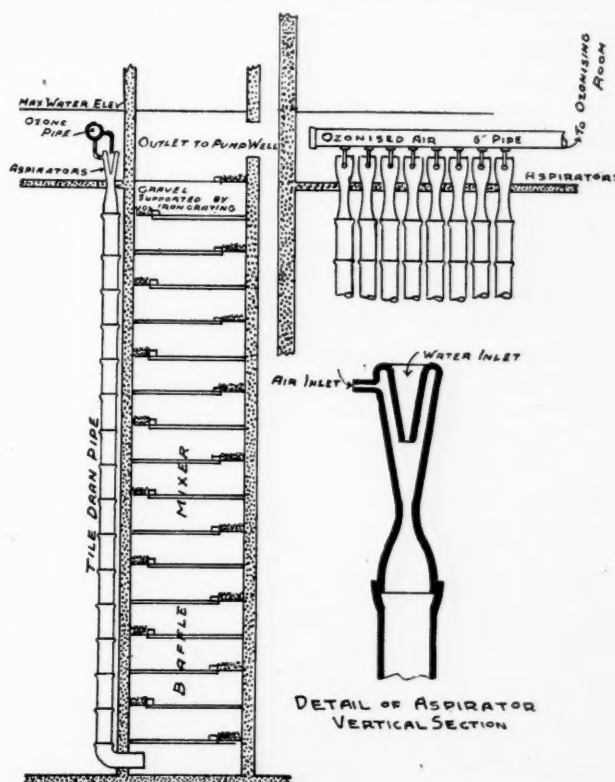


FIG. 4—ASPIRATORS AND MIXING WELL

forward through a box containing baffles of perforated plates, to the surface of the well. In this traveling together for about 85 feet the ozone is supposed to part with its active atom and destroy the organic matter, including the bacteria, in the water. The water is then pumped from this receiving well into the town mains and standpipe.

The gas generated is without doubt ozone and answers to all the ordinary tests. The smell and physiological effects are quite unlike those of nitrous acid; it is comparatively insoluble in distilled water and samples of the latter saturated with ozone reached the laboratory in Toronto 24 hours afterward with the strength of the gas apparently undiminished.

"I have demonstrated the presence of nitric oxide gases in the ozonized air by aspirating large quantities of the air through ammonia-free distilled water rendered alkaline with potassium hydrate. The amount of nitrogen oxides formed is very small. When we pumped large quantities of ozone through the town water the nitrites and nitrates increased, but largely at the expense of the free and albuminoid ammonia present."

The action of the ozone and filters on the water should be clearly shown by the physical and chemical changes produced in it. Samples were taken from the raw river water as it came into the filters, from the filtered water well, from the ozonized water well and from the town supply, usually from the hotel tap, and analyzed.

Average Composition of Seven Series of Lindsay Waters
Parts per Million

Specimen.	Free NH ₃ .	Albuminoid NH ₃ .	Nitrites and Nitrates.	Total solids.	Total hardness.	Temporary hardness.	Permanent hardness.	Oxygen consumed.	Color (true).	Chlorine.
Raw .....	.022	.238	.129	.0212	195	140	55	5.6	25	1.5
Filtered .....	.023	.227	.194	.0212	200	142	58	5.7	25	1.5
Ozonized .....	.023	.228	.163	.021	206	140	66	5.6	25	1.5
Tap .....	.018	.224	.190	.024	202	140	62	5.0	25	1.5

Dr. Nasmith, from whose report the above is to a large extent quoted, states that if the water had been properly ozonized the free ammonia, albuminoid ammonia and oxygen consumed should have decreased, the nitrites and nitrates should have increased and the color should have practically disappeared; since these changes were found to take place when ozone was pumped through the same water by means of a force pump. The analyses show that there was little, if any, of this effect produced by the ozone plant. "From these analyses it will be seen that ozone has done absolutely nothing, not even removing the color in the slightest degree." Several experienced laboratory men are said to have confirmed the readings of these investigators from which they conclude that the filtered water before and that after being ozonized could not be distinguished apart.

As to the amount of ozone applied, specimens taken just above the aspirators averaged 0.275 gram of ozone per cubic meter of air with the aspirators and blower working. When a plug was removed from the ozone pipe so that air could be driven directly out of it 0.66 gram was found in a single test. Specimens taken directly from the ozone room gave an average of 2.3 grams of ozone per cubic meter. "These figures indicate that under ordinary conditions only a part of the ozone is going down the pipe, while it tends to accumulate in the ozone room.

It seems to be generally conceded that 1 cubic meter of water with a low content of organic matter will need at least $\frac{1}{2}$ cubic meter of ozone, with a concentration of $\frac{1}{2}$ to 1 gram of ozone per cubic meter, to purify it." There was ebullition on the surface of the ozonizing well which apparently indicated that all the ozone was not going into the water, and a standard anemometer was placed in the ozone pipe 4 feet above the aspirators. It was assumed that 50,000 gallons of water per hour was flowing through the aspirators and that consequently 25,000 gallons of ozonized air per hour should be drawn through them, or a velocity of 340 feet per minute through the 6-inch pipe. As a matter of fact, the movement of air in the pipe was so slight that the anemometer would not turn at all. In other words, the ozone which was being generated was not being

drawn into the water. When the ozone pipe was allowed to discharge freely into the sterilizing well and the blower was blowing ozone into the well as fast as it was formed, the anemometer gave the rate of flow as 1,117 feet per minute, the concentration at the same time being found to be 0.66 gram per cubic meter of air. This gave 4.1 grams of ozone per minute or 246 per hour flowing through the pipe. As the amount of water then and now being pumped was about 50,000 gallons per hour there was sufficient ozone produced to yield 1.08 grams of ozone for every cubic meter of water pumped. Results at other places where ozone is used successfully would indicate that this amount would probably be ample were it all employed effectively. The chief defect of the plant would therefore appear to be the aspirators, which failed to draw the ozonized air into the water with anything like sufficient rapidity.

Another feature which interfered with the most effective operation of the plant was the presence of considerable amounts of moisture in the ozonizing room; which moisture reduced the amount of ozone yielded and increased the nitric oxides and the sparking between the plates, the moisture condensing on the aluminum plates of the ozonizers when the current was off and resulting, when the current was turned on, in short-circuiting and burned fuses. This moisture came largely from back draughts of moisture-laden air from the ozonizing well through the aspirators.

The report of the bacteriologist, based upon more than 190 tests of each kind of water, shows the average number of bacteria in the raw water to have been 827, in the filtered water 577, in the ozonized water 531 and the tap water 528. This shows an average reduction due to the filters of 30.2 per cent, with an additional reduction after passing through the ozone sterilizer of 7.98 per cent of the bacteria then present. The combined reduction by filtration and ozonization was 35.78 per cent; while a slight further reduction was found to take place in the mains, attributed to sedimentation. Only a few tests were made to determine the presence of colon bacilli, but these seemed to indicate in practically every case that such were present in both filtered and ozonized waters.

In general the report of these investigators appears to indicate that ozone was being created probably in sufficient quantities to produce the desired results, but that for some reason it was not reaching and being mixed with the water and that consequently little beneficial result was obtained, although it was admitted that such result would almost certainly have followed a proper absorption by the water. One matter which is not explained is that a previous investigator, an expert bacteriologist, who had previously reported upon the plant, had found it to be removing a large percentage of the bacteria and producing a water entirely free of colon bacilli.

The report which formed the basis of the acceptance of the plant was submitted last July by Dr. T. D. Archibold, after a test made by him which included eleven analyses of raw, filtered and ozonized water. It was stated at the time that Dr. Hodgett, Secretary of the Provincial Board of Health, had given to the Lindsay Water Commissioners "a satisfactory statement concerning the qualifications of Dr. Archibold, who is demonstrator in bacteriology at the Toronto University." Dr. Archibold made bacterial tests only, and during these some unusual conditions, such as excessive pumping for a fire, interfered with a satisfactory test. The results of these test he reported to be:

Ozonized 1cc. 1-10cc.	Number of Colonies		Raw 1cc. 1-10cc.
	Filtered 1cc. 1-10cc.		
18	46	4	97
21	22	4	102
27	113	5	400
4	14	2	31
229	42	8	70
2	19	1	63
7	15	2	42
18	31	3	1200
48	212	12	15
12	567	33	1500
27	48	6	193

Examination for Pathogenic bacteria—
Raw Water—Colon bacilli—present
Filtered Water—Colon bacilli—present
Ozonized Water—Colon bacilli—absent

Basing his conclusions upon these tests he reported as follows:

1. The plant, when working under ordinary conditions furnishes a water perfectly safe for drinking purposes from a sanitary and public health standpoint, as it contained very few bacteria. (The maximum number being 48 and the minimum 2 per c. c.)

2. Regarding the presence of harmful organisms, both the raw water, and the filtered water contained colon bacilli, while the ozonized water showed entire absence of these organisms.

3. When running under abnormal conditions, such as the case of fire, when there is a sudden rapid filtration, the ozonizer apparently failed to do its work, as seen by the figures in test No. 5. I understand that the capacity of the electric pump is 1,200 gallons per minute, while the capacity of the ozonizing plant is only 700 gallons per minute. It would, therefore, seem that were the ozonizing plant of sufficient capacity to treat all the water passing through it, that a satisfactory result would be obtained.

IRON IN SEWAGE FILTERS

Large Quantities Contributed by Manufacturing Plants—Effect Upon Sand Filters—Excluding from Sewage and Removing from Beds

By F. H. OLDERSHAW, City Engineer

In 1901 the sewer system of New Britain, Conn., was reconstructed into a separate system of sewers, one sewer being for storm water with outlets to neighboring streams, the other sewer being for house sewage only. All new sewers constructed since have been built on this plan. The lateral and intercepting lines of the system for sewage only have an outlet through two large trunk lines to the filtration station. The east trunk line, so-called, carries the sewage of 65 per cent of the city in general and 75 per cent of the sewage and wastes from the large number of our hardware manufacturing concerns; the south trunk line, so-called, carrying the sewage from the balance of the city.

The system used for sewage filtration is the downward intermittent filtration. The beds are constructed of coarse gravel and the underdrains are from 5 to 6 feet below the surface of the beds. We have at present 33 beds, each one acre in area, and one bed 5 acres in area. Before the sewage is turned onto the beds it passes through settling tanks, of which we have two, they being used alternately for a period of one week each and then cleaned. These tanks remove by sedimentation about 50 per cent of the sludge, or about 16 cubic yards daily, and have proved an important adjunct to the beds, as they relieve them to a great extent and, by confining a large part of the sludge to the tanks, obviate the raking of same continually from the beds, thus reducing the maintenance cost considerably.

The population, at present, is 46,000 and our daily sewage flow at the filtration plant is about 6,500,000 gallons, this being determined by weir readings.

Before these filter beds were built it was shown by experiments conducted with the soil that about 200,000 gallons of sewage could be filtered every 24 hours by beds one acre in extent. From 1902 to 1907 the beds came up to all expectations in their work. In 1908 it was noticed that the efficiency of the beds was greatly lessened and they were unable to handle as large an amount of sewage, and the beds were carefully watched to find out the cause.

In June, 1909, it became very apparent that there was considerable iron in our sewage, this being shown by a reddish brown deposit in the effluent ditches and at intervals by the imparting of a distinct color to the sewage. This presence of iron was shown conclusively a little later on by the formation of a crust on the surface of the beds, which proved very detrimental to the working of them. Geologists are well aware that the oxides of iron are the chief cementing material of certain sandstone. From investigation and analyses of this crust above mentioned, it was found that the beds were becoming coated with a ferruginous cement which formed the above crust; analyses of which showed about 75 per cent of silica and 24 per cent of iron

and small quantities of magnesium, aluminum, tin, zinc and calcium.

It was immediately apparent that the trouble came from factory waste and it was traced for the most part to one of the manufactories and proved to be the waste from their wet sand rolling barrels. We immediately took up the matter with the officials of that concern and they co-operated with us in overcoming the difficulty, by passing all their wastes through a system of settling basins at their plant before allowing them to enter our sewers. The result has been that no crust has been formed since.

This did not, however, bring back the beds to their full efficiency and in the fall of 1909 it was determined to build a small experiment station according to plans as designed by the city engineer; the station consisting of a grit chamber, 2 feet x 2 feet x 2 feet deep; a septic tank, 10 feet x 12 feet x 5 feet 6 inches deep, and two beds, 22 feet x 20 feet, these beds being of the same construction as those in use. The station was built and put into operation in November, 1909, and Mr. Jas. A. Newlands was employed as consulting chemist to look after that part of the work.

Data along the following lines were obtained as soon as possible: First, data from all the manufacturing plants as to the average daily amount of water from iron work; second, as to the different acids used in the work and how much per day; third, as to whether the waste emptied from vats at intervals or flowed continually into the sewers. At the same time, analyses were made three times a week of the sewage and septic tank and filter effluents. These analyses included the determination for iron, as it was considered that this would prove the cause of trouble. After the experiment station had been run a short time, analyses which were made showed that the filter effluent was much better and the rate higher than for the regular filters, but also showed that there was a considerable deposition of iron in the filters. Results from the determination of iron made it apparent that about 40 per cent of the iron in the sewage settled out in the septic tank, the remainder being practically all caught in the filters and clogging them up, which resulted in a lower rate of filtration. Analyses of the sewage of the trunk lines made at the same time showed an iron content of 1.6 parts per million in the south trunk line and 26.6 parts in the east trunk line, the latter being equivalent to 221 pounds per million gallons, a large portion of which remained in the filters.

We immediately turned our attention to the iron contents in the east trunk line and obtained numerous samples of sewage at points where the different manufactories individually emptied their wastes into the sewers. Analyses of these samples showed that four of the above were the chief offenders, the samples showing 124, 52, 70 and 105 parts per million, respectively. These analyses did not show the average amount of iron in the sewage, but did show that a large amount of iron was discharged at certain times of the day. The chemist at one of the manufactories is now at work experimenting on the matter and is investigating methods for the removal of the iron by producing a by-product, and if this proves a success the other manufactories will use the same treatment.

After the iron is eliminated from the sewage, we will have to take up the matter of the iron already deposited in our filters. Analyses have been made for the determination of iron in the material of the different filters, the samples being taken at depths of every 6 inches. The results of these analyses so far show that 250 tons of iron have been deposited in the first foot of material of the 34 regular filters, the amount of iron decreasing until at a depth of 24 inches, the material seems free from the iron. Two means of removing this iron are now under consideration: First, by removing the top material of each bed as far as the iron has penetrated and replacing with new material; second, by passing some chemical through the beds and carrying off the iron in solution.

It can be readily seen that excessive amounts of iron are discharged into the sewers at intervals and, if it continues, the filters will in time be put out of commission. If methods are

not devised for taking out the iron from the wastes before they are discharged into the sewers, arrangements can be made for these wastes to be held at the different manufactories until a certain time each day, when they can be discharged into the sewers at the same time and given special treatment at the filter beds on beds for that purpose only.

Experiments on the question are still under progress, but have not been carried far enough for definite conclusions, and at present it is impossible to state just what we will do to remedy the conditions.

CONCRETING IN FREEZING WEATHER

Heating Materials Generally Recommended—Use of Salt— Devices for Preventing Sidewalk Concrete from Freezing—Heat from Chemical Action

THE Iowa Association of Cement Users, which met in Cedar Rapids in March, discussed the subject of the use of concrete in freezing weather. Mr. Geo. P. Dieckmann, of Mason City, read a paper discussing this subject and in connection with this and other papers some interesting personal experiences along this same line were given. Mr. Dieckmann stated that "Some concrete which had been made at freezing temperature has not shown any defects, while on the other hand concrete made under similar conditions became disintegrated and worthless. It has been recommended that the materials be heated, especially the sand and stone, and also that warm water be used. The use of soda ash and chloride of calcium mixed with water is also advocated. The warming of the materials is frequently done but it is practically impossible to heat and mix a large body uniformly. The application of warm water is more practical. The addition of salt dissolved in the warm water seems to be of advantage for preventing freshly mixed concrete from freezing." The author made 30 tests in six different series of five each to ascertain the amount of salt which might be used without affecting the strength of the concrete; the five tests of each series being of briquettes tested after 2, 7, 28 and 60 days with neat cement and mixtures of three parts sand and one part cement. A total of 480 briquettes were tested.

The first series of briquettes were made at normal temperature and stored in air at normal temperature. The second series were made at normal temperature and immersed in water at normal temperature. The third series were made at freezing temperature, all materials and water being at 32 degrees F., and the briquettes were stored at the same temperature. The fourth series were made at freezing temperature but all materials and water were warmed to about 75 degrees; the briquettes being then stored in air at freezing temperature. The fifth series were just like the fourth, except that the briquettes were stored in air at freezing temperature and then subjected to alternate freezing and thawing, each for twelve hours, for seven days; the remaining time being stored in a freezing temperature.

His conclusions from these tests were that frost affects the hardening of neat cement, especially in the early stages; but when from 1 to 2½ per cent of salt was added good results were obtained. Slight frost does not seem to affect concrete mortar to any marked degree. To provide against heavy frosts, however, the addition of from 1 to 2½ per cent of salt is of advantage; but more than this amount causes a marked decrease in tensile strength, and in addition the excess of salt causes a white precipitate on the surface.

Mr. W. B. Wallace of Cedar Rapids described certain of his experiences with handling concrete when laying sidewalks in freezing weather as follows: "In 1904, we built a walk around a large wholesale house using salamanders for heat in the areas beneath the walk, and covered the top with a layer of sand a foot deep; all this in the month of December. Too much care can not be taken to carefully cover the tops,

as it is almost certain to freeze the thin crust of water that is floated to the top and the result is a scale will be flaked off and the appearance marred.

"On the Sixteenth avenue bridge this past winter we gave the walks a severe test, but have saved 90 per cent of our work by a simple expedient. We continued the use of steam heating of sand, stone and water and in addition played a steam jet over all the false work and reinforcing steel. Then a shed was erected consisting of two layers of building paper on a light frame made to fit together and long enough for about 150 feet or a day's run. Then a steam pipe was run over the top of the walk about a foot above it, and when supplemented with salamanders a temperature of 60 degrees F. was obtained. The top set very quickly and the immediate danger was over. The walk was lightly covered and the shed moved for the next day's run." In other work Mr. Wallace used salt at the rate of ten pounds to a barrel of water, and kept the materials hot, and the results were most gratifying. Altogether he found the use of live steam to be the most feasible and cheapest method of preventing freezing. A steam hose fitted with an iron pipe 6 or 8 feet long for a nozzle, and with a steam pressure of 60 or 80 pounds, will force the heat through a stubborn pile of stone or gravel and, in a half hour after starting, every wheel barrow and shovel and tamper will be warm and kept warm by contact with the hot concrete. It is only necessary to use the materials at once after removing them from the pile. The nozzle and hose are fed by an auxiliary boiler 20 or 30 feet long.

Mr. J. W. Eckerd mixes his concrete with water heated by a fire under the tank, so that it is used boiling hot, and the concrete steams as it goes into the wall. This he finds keeps the concrete warm until after it has set. In one case a sidewalk had just been completed when rain and freezing temperature together seemed to threaten its destruction. He dammed up the gutter below the sidewalk so that the sidewalk was entirely flooded with water. Although a layer of ice froze upon the water the concrete was not damaged, being protected from the cold by the water.

Mr. Leon Goodman called attention to the fact that in heavy wall or sidewalk foundation work, heating the materials would generally serve the purpose; but that in thin slabs like concrete floors, which the cold can reach on both sides, no practical amount of heat can be given the materials which will prevent their falling below the freezing point before the concrete has set.

Attention was called by another member to the fact that the chemical action of the cement in hardening produced some heat, which would prevent freezing if the temperature fell only slightly below 32 degrees and the materials were kept warm until such chemical action began.

Mr. G. E. Lathwell, of Cedar Rapids, told of his experience in steam-curing concrete blocks. He allowed the steam to escape into the room from fine holes in the steam pipes, the moisture being beneficial and the heat keeping the temperature of the room at 80 to 90 degrees in winter.

STREET RAILWAY DEVELOPMENT

A REPORT of the Bureau of the Census which will soon be issued contains statistics concerning street railway development up to and including 1907. These show that in the five years preceding, street car mileage increased 41.4 per cent and the passengers carried 63.3 per cent. The number of companies increased 25.2 per cent and the trackage by 52.4 per cent. The gross income of the railways had increased 71.6 per cent and the amount of salaries and wages had also increased considerably. In 1907 there were 945 operating and 291 lessor companies. Of the 945 operating companies 902 reported the use of electricity by line transmission, and this was also one of the classes of power used by every company employing more than one kind. Other classes of power used were confined largely to horses and cable.

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JUNE 22, 1910.

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Municipal Publicity Campaigns

ENTERPRISING cities in all parts of the country are taking up
the matter of advertising and conducting publicity campaigns
on a scale greater than ever before. The Cincinnati Industrial
Bureau is said to have influenced the location of over 100 new
industries, employing 6,000 wage earners. Williamsport, Pa.,
having maintained a \$215,000 guarantee fund for new industries
for five years, has now increased this sum to \$461,000. Elmyra
spends \$30,000 a year and has procured 24 new factories in
less than five years. The city of Buffalo started in to raise
\$100,000 in one week, and met with most gratifying success.
The Chamber of Commerce and Manufacturers' Club is at the
head of the movement. Secretary Fenton N. Parke states that
it is the intention to establish a convention bureau, an industrial
bureau and a publicity bureau. In addition to the results of
industrial bureaus in the cities above mentioned, he cites the

success of the one which, during 1909, secured for Grand
Rapids 77 new corporations with a capital of over \$5,500,000.
Conventions he considers desirable because, aside from the
money left in the city by delegates to conventions, the mouth
to mouth advertisement that the city would receive gratis from
all who attend such conventions would be invaluable.

Lindsay Ozone Report

THE only public water supply which has been purified by
ozone under actual service conditions in this country is, we
believe, the one at Lindsay, Ont., and reports upon the same are
given on another page of this issue. It will be seen that the
report of Dr. Archibald is based upon tests of only eleven
bacteriological samples some of which were taken when unusual
conditions existed. It is unfortunate that another and more
extended series was not taken when all conditions could be
maintained normal. As it is, his figures (omitting one abnor-
mal set) show that the filters removed on the average about 72
per cent of the bacteria, the ozone about 83 per cent of the
remainder, or the two together about 95 per cent. Nothing is
said of the effect on color or organic matter. The test of the
representatives of the Provincial Board of Health extended
over three months, and was chemical as well as bacteriological.
Their report expresses belief in the effectiveness of ozone, but
appears to show this plant to be inefficient because of faulty
aspirators. There appears in the report some confirmation of
the prejudice against the plant said to be entertained by certain
officials of the board; but, allowing for this, unless it can be
shown that the tests themselves were incorrectly made or re-
ported, it seems to be demonstrated that the plant cannot be
considered a success although it may be possible to render it
so by increasing the efficiency of the aspirators.

Sidewalk Inspectors in Hartford

THE city of Hartford, Conn., makes systematic inspection
of the curbs and sidewalks of the city—that is, the part of
the street surface which is semi-private in its ownership—by
means of inspectors retained for this sole purpose. This
spring, on the suggestion of Deputy Superintendent of Streets
Charles J. Bennett to Superintendent and City Engineer Fred-
erick L. Ford, these inspectors have been relieved of clerical
work which was previously required of them, which enables
the two inspectors, who divide between them the 130 miles of
city streets, to spend practically all their time in actual street
inspection. Their duties are to inspect streets in the regular
order so that all streets in the inspector's districts are covered
during a certain fixed period. Daily reports are made by the
inspector, on a card, of the condition of curbs and sidewalks
inspected that day; this to include any imperfections which
might cause accidents on which suits against the city could
be based. The inspector makes recommendations concerning
repairs which should be made to curbs or sidewalks and the
streets on which, in his opinion, the curbs should be reset
and the sidewalks relaid. The deputy superintendent, to whom
these reports are made, may then call upon the engineering
department to examine such curbs and sidewalks and de-
termine just what work may be required upon them; and the
superintendent of streets, on the basis of these reports, has
the clerical force send out notices to property owners to do
the necessary work. After a sufficient time has elapsed for
all owners to receive these notices, they are posted in a curb
and sidewalk book which is open to inspection by curb layers
and property owners. The contractors who do this class of
work are required to notify the department of the time and
exact location where any new work is to be done by them,
and it is a further duty of the inspectors to look after such
work and see that it is properly performed. The department
endeavors to have the curb and sidewalk work centralized
so that, at any given time, all the work of this nature which
is being done will be within one district, and thus make it
easier for both contractors and inspectors to superintend all
the work in hand.

NEWS OF THE MUNICIPALITIES

Current Subjects of General Interest, Under Consideration by City Councils and Department Heads—Streets, Water Works, Lighting and Sanitary Matters—Police and Fire Items—Government and Finance

ROADS AND PAVEMENTS

Maryland Roads Commission Organized

Annapolis, Md.—As the result of the consolidation of the Highway Division of the Geological Survey with the State Roads Commission the latter body, into which the other was merged, elected a number of employees. In the future all road work will be done under the control and supervision of the commission. The employees are as follows:

Chief Engineer—W. W. Crosby, \$5,000 a year.
Counsel—Carville D. Benson, \$2,000.
Engineer in Charge of Construction—Edward F. Ruggles, \$2,600.
Engineer in Charge of Maintenance—William B. Uhler, \$2,500.
Secretary—State Senator E. E. Goslin, Caroline County, \$1,800.
Draughtsman—J. N. Mackall, \$1,600.

The commission granted Mr. Crosby a leave of absence from July 15 to August 15 to attend the International Roads Congress in Brussels. Mr. Crosby has been selected by the United States Government to represent this country at the Congress. He will read a paper before the gathering.

Baltimore-Washington Boulevard

Baltimore, Md.—Contracts for work on the Baltimore-Washington boulevard have been held up by the State Roads Commission on the theory that the money authorized for the continuation of the work is not available until October. If this theory is permitted to control the situation it will not be possible for the work to be commenced on the ten miles of the boulevard that remains to be built until next summer, and the road will not be completed until the summer of 1912. Just at present the only work that is being done on the boulevard is just beyond the limits of Baltimore city, where work is progressing on a stretch of $1\frac{1}{2}$ miles.

Macadam Resurfaced and Asphalted

Dallas, Tex.—Under the direction of Street Commissioner William Doran a stretch of about 1,500 feet on Gaston avenue in East Dallas has been paved with macadam and with asphalt finish. The old paving was scarified, a dressing of about three to four inches of Jacksboro rock was put upon it and rolled, melted asphalt was poured over the surface until it had run into all the voids between the stones and had formed a top dressing, and this was finished with a coat of small rock to give a wearing surface. Mr. Doran is pleased with the paving and expects excellent results. If it proves good, others of the residence streets will be finished in this manner.

Highway Commissioner Makes Suggestions

Harrisburg, Pa.—Joseph W. Hunter, State Highway Commissioner, has had issued a pamphlet on the duties of road supervisors, in which he gives many helpful suggestions as to the building and maintaining of good roads.

Repairing Asphalt with Brick

Binghamton, N. Y.—Asphalt pavement repairs this year will cost less than \$500, although in years past, when asphalt was used as the pavement repair material, the cost ran up to \$14,000. For the past month a force of men has been engaged in repairing the holes in the asphalt pavements with brick. It was first planned to use an asphalt mixture, but it was found that the material could not be utilized unless the city purchased a heater, which was inadvisable, and brick was again selected to fill the holes. All the asphalt pavements have been patched and are in condition to last another year. Work of repairing the brick pavements has begun, and the men are now employed on Oak street. The sum of \$2,500 was set aside in the budget for this purpose last Fall, and the whole amount will be expended before the work is finished. It is planned to place a large enough sum at the disposal of the Department of Public Works next year to place all the brick pavements in first-class condition.

Arguments Favor Kansas City-Fort Scott Road

Fort Scott, Kan.—Arguments for and against the Kansas City-Fort Scott road are being continued by the residents of the district the road will traverse. An argument in its favor is found in a provision of the Hodges rock road law that has heretofore been entirely overlooked, providing for the exemption of all property paying a good roads tax from the regular road levy, and by the application of this provision the cost of the road will be reduced by one-half to the landowner. The cost of the road as it is planned will not exceed \$4,000 per mile at any place, and much of it can be constructed for \$3,000 a mile or less, which with a road district of three miles in width would assess a cost of about \$1.20 against each acre of land in the district. At the present time this land is paying $\frac{3}{4}$ mill levy for road purposes and receiving no permanent improvement from it, but this sum would not be assessable after the creation of the road district. The fact that 67 per cent of the automobiles in the State are owned by farmers is an argument that those who pay for the road will benefit from it.

Street Oiling by City of Muncie

Muncie, Ind.—The work of placing road oil on East Gilbert street, which is being done by the city as an experiment with the new solution of oil was begun last week. The street is being oiled from Mulberry to Elm streets. If this experiment proves satisfactory the city will then, in all probability, contract for enough oil to cover the majority of the principal macadam streets in the city. Before the oil is placed the street is thoroughly cleansed of all the dust and loose top covering and the oil is poured on the hard stone roadbed. Nearly all of the larger cities are taking up the method of oiling their streets, as it is claimed that the road oil not only lays the dust but lengthens the durability of the street.

Will Regulate Street Openings

Paterson, N. J.—Under a new ordinance introduced by the Board of Works pertaining to street openings, there will be some prospect of the city's streets being placed in good condition after they have been opened by public service corporations or by other persons who desire to make house or other connections. The ordinance provides in the first place that no opening of any kind shall be made in a street without permission having first been obtained from the Board of Works. When permission has been granted to companies to open streets they must put up a suitable bond and then repair the street in accordance with the provisions of the ordinance, which are so strict that they assure a good piece of work. In cases where openings are made by others than public service companies, the ordinance provides that each year the Board of Works shall ask for bids for the proper repair of the street openings and a contract shall be awarded to the lowest bidder, who shall make all repairs for that year. When a request for a street opening is then received the City Engineer will estimate the size of the opening and the person asking for the permit will be forced to pay.

Height of Buildings in Washington Regulated

Washington, D. C.—The conference report on the bill to regulate the height of buildings in the District of Columbia has passed both houses of Congress, and the measure now only requires the signature of the President to become law. Representative Campbell of Kansas, chairman of the House conferees on the measure, called up the conference report just before passage by the House and explained that the Senate had receded from its amendment—excepting the block between 11th and 12th streets on Pennsylvania avenue—from the operation of the paragraph limiting the height of buildings on that thoroughfare to 130 feet, and proposing to permit the erection of buildings in that block to 160 feet—and that the conferees had reached an agreement to except the entire north side of the avenue from 1st to 15th streets, so as to permit any building within those limits to be erected to the maximum height provided.

Toll Road Commission

Harrisburg, Pa.—A meeting of the Toll Road Commission, which has for its purpose the elimination of all toll roads in the State of Pennsylvania, will be held at the Bellevue-Stratford, Philadelphia, on Friday morning, June 24. The immediate purpose of the gathering is to consider data pertaining to the question collected during the past year and to frame a report and draft a bill for presentation at the next session of the Legislature. This bill will probably provide for the condemnation of every toll road in the State and a proper division of the costs.

Pushing Rock Road Work

Kansas City, Kan.—The rock road from Kansas City, Kan., paralleling the Union Pacific Railroad from Kansas City, Kan., to Bonner Springs, near the western line of Wyandotte County, is to be finished and in use by the end of this year, if the plans of the Wyandotte County Commissioners are carried out. From the west end of Kansas avenue, in Kansas City, Kan., to Muncie, five and one-half miles distant, the macadam was laid last year. The macadam has been laid this year from Edwardsville to Bonner Springs, three and one-half miles, and the road is being made ready for the macadam between Edwardsville and Muncie, to close the gap of three miles.

SEWERAGE AND SANITATION**Health Officers Organize**

Albany, N. Y.—In order to make more thorough the work of Health Officers and Boards of Health throughout the State, the State Department is urging the organization of County Health Officers, so that it will be convenient to reach the officers both as individuals and as an organization. This is found necessary because of the fact that all Health Officers and all Health Boards, as to sanitation and the like, do not agree, with the result that the public health is likely to suffer.

Disinfection of Public Buildings

Austin, Tex.—The repeal of the old State health laws and the passage of the Board of Health law by the Thirty-first Legislature has apparently caused a hiatus in the statutes so far as the disinfection of public buildings is concerned. Under the old law the State Health Officer had the authority to require public buildings, jails, etc., to be kept in sanitary condition. With the repeal of this law, the Legislature provided that the sanitation of such buildings should be provided for in the advisory code to be adopted by the State Board of Health. The State Board of Health has made provision for the sanitation of all public buildings in this advisory code, but the code must be adopted by the City Councils, City Commissions or County Commissioners before it becomes effective. The cities and counties of the State have not taken kindly to the advisory code, and wherever it has not been adopted there is no State regulation as to the sanitation of public buildings, jails, etc.

Plans for Sewage Disposal Ordered

Utica, N. Y.—In granting a permit to the city of Utica to extend a sewer the State Board of Health has notified the city that by May 1, 1911, the authorities having sewer construction in charge must submit satisfactory plans, as follows: (a) plans for intercepting or outfall sewers to convey the entire sanitary sewage of the city to a suitable site for disposal; (b) detailed plans providing for a partial treatment of the entire sanitary sewage of the city by sedimentation and screening; (c) plans showing the location, general arrangement and type of works for complete treatment of the sewage. Then whenever required by the State Commissioner of Health the intercepting or outfall sewer and the works for partial treatment of sewage shall be constructed within a time limit then specified. That whenever required by the State Commissioner of Health satisfactory, detailed plans for complete treatment of sewage shall be submitted to this department for approval; and such works shall be continued and completed within such time thereafter as may be specified by the State Commissioner of Health.

An Additional Sewage Disposal Plant

Houston, Tex.—Considering the rapid extension of the city south and west, Mayor Rice for the city has made the purchase of nearly two hundred acres of land on Sims bayou for an additional sewage disposal plant. This provision is to meet a demand that will be urgent by the time of its completion. The plans for its construction have been completed by the engineering department. The exact acreage is 197, the total cost at \$125 per acre amounting to \$24,625. The tract lies eight miles south of the city along Sims bayou and the Santa Fé Railroad tracks, and is reached by the Leeland avenue road. There is a fine artesian well on the land, and this and other wells will be used in the operation of the filter beds.

Rabies Situation Serious at Lafayette

Lafayette, Ind.—Never before in its history has Lafayette been so agitated by a mad dog scare as at the present time. Not only in the city but throughout the county the ever-increasing epidemic of rabies is causing consternation. The city and county authorities are unable to account for the rapid spread of the disease, and there is some talk of killing every dog in Tippecanoe county. Conditions have grown from bad to worse until it is now admitted by all that the situation is serious. The police are killing scores of dogs, and will continue to shoot down unmuzzled animals just as rapidly as they meet them in the streets. But this does not do away with all the danger, for the pet animals in the homes are beginning to show signs of rabies, and several instances have been reported of women and children being bitten by household pets.

Sanitary Regulation of Bath Houses Needed

New York, N. Y.—The following resolution has been introduced in the Board of Aldermen:

Whereas, The New York Medical Journal, one of the most influential papers representing that profession, in a recent article on the public bathing facilities at Coney Island, said:

"Many of the bathing houses scattered up and down the beach are little short of disgraces to civilization. The dark, dirty, damp, ill-favored booths which persons must occupy who would enjoy an ocean bath, are a menace to the health, and must surely breed disease," and

Whereas, The model sanitary public bathing house for which the city appropriated money is delayed in construction owing to the litigation which has been brought to test the city's right to establish such a building on the selected site, and

Whereas, The thousands of our citizens who are accustomed to bathe in the ocean during the summer season are entitled, pending the determination of this litigation, to be provided with dressing rooms in the present public baths, which are not a menace to the public health as described in the New York Medical Journal, therefore be it

Resolved, That the Board of Health is hereby requested to draft and incorporate in the Sanitary Code a set of regulations which will be conducive of placing and maintaining these dressing rooms in a sanitary condition, and be it further

Resolved, That the Board of Health be also requested to impose a regulation in the Sanitary Code which will require the sterilization of bathing suits each time after they have been used.

Peculiar Repair of Sewer

Washington, D. C.—The work of repairing the weakened trunk sewer from New York avenue to H street on 14th street northwest is completed. It cost the District \$7,000 in round figures, and was one of the most unique pieces of repair work attempted in the local sewer system. The old brick trunk which runs down 14th street weakened under the constant thumping of the two car lines which cross at 14th and H streets. In order to repair the underground tube without disturbing traffic Asa E. Phillips, superintendent of the sewer department, had his engineers and workmen burrow under ground between two shafts placed at either end of the block and a parallel sewer of modern construction was laid, the course of the old sewer was turned into the new tube, and the old tube was filled up. The filling up was, in a way, as interesting as the laying of the parallel sewer, many feet under ground without a crack in the pavement. One end of the discarded tunnel was sealed up with a brick bulkhead, a small terra cotta tubing was laid throughout the old tunnel to take off seepage and the drain from certain small connections which could not be easily run into the new section, and the workmen began to fill the old sewer up with a mixture of cement, pebbles and sand.

WATER SUPPLY

Buffalo Intake Tunnel Inspected

Buffalo, N. Y.—A party of engineers and others, including George H. Bensenburg, E. P. Goodrich and Henry Jap, engineers for the Councilmen's committee; S. H. Woodward, R. A. Shailer and R. B. Value, for the contractor, the Buffalo Dredging Company; Mayor Anthony C. Douglass, of Niagara Falls, representing Col. Francis G. Ward, Commissioner of Public Works of the city, made an inspection last week of the new water works tunnel between the foot of Porter avenue and the intakes in Emerald Channel. The inspection was made with an air pressure of 24 pounds. No seepage of water was found.

Object to Consulting Engineer Charges

Baltimore, Md.—Messrs. Hazen and Whipple, the New York engineers, who made a sanitary survey of the city's watershed for Advisory Engineers Freeman and Stearns, have informed the Water Board that they would not accept its tender of about \$3,000 for the firm's services, after eliminating \$815.65 for work done by the firm's assistants. The Board was asked to return all plans and drawings submitted by the engineers in connection with their report. It was stated in the letter that after these plans and drawings had been received in New York the firm would take up the matter of preparing a new bill against the city, based on the actual services of the two experts.

Favors Selling Water Outside of City.

Cincinnati, O.—Superintendent Robert Laidlaw, of the water works, is in favor of selling water to the villages near the city. He figures that the water costs \$70 per million gallons and can be sold for \$100. The profit could be used to pay off the bonded debt.

Municipal Water Strongly Urged

Cranford, N. J.—Municipal ownership of its water and electric light plants was unanimously indorsed by voters at Cranford last week at a public meeting called for the purpose of discussing water conditions in Cranford. During the past few weeks there have been many complaints regarding the supply as furnished by the Plainfield Union Water Company. It was claimed that the water was cloudy and that it emitted a bad odor. Samples of the water were sent to the State Board of Health for analysis. That body reported the water was colorless and free from odor. Notwithstanding this report the residents were not satisfied and engaged an expert from New York to make an analysis. He, too, reported the water to be colorless and without odor. Despite these reports, the public meeting was called and resolutions were adopted condemning the water supply and favoring the town owning its own plant, together with its electric light system. The Rev. George Francis Green declared the experts erred in making their reports as to the condition of the water. He declared there is a disagreeable stench about it, and that particles are visible in it.

Dunkirk Plans to Save on Contracts

Dunkirk, N. Y.—City Engineer John M. Hackett has inserted a clause in the sewer specifications by which the contractor must bid per lineal foot on earth basis and also state a price to be charged per cubic yard for rock excavation and if solid rock is encountered the contractor will be paid extra for the same at the price per cubic yard in addition to the earth price per lineal foot. It has been the previous custom for contractors to make their bids high enough to protect themselves from possible loss when finding rock where not anticipated.

Water Revenues Greatly Increased

New York, N. Y.—Mayor W. J. Gaynor has sent the following compliment to the Commissioner of Water Supply:

Sir—Your favor of June 2 is at hand, and although you modestly refrain from stating the measures which have increased the water revenue, I am well aware that the increase is not the result of accident. Honesty and fidelity in the public service is not always appreciated, but I hope that the intelligent citizens of New York are taking note of it in your department. Sincerely yours,
W. J. GAYNOR, Mayor.

Henry S. Thompson, Esq.,
Commissioner of Water Supply, Etc.

In his letter Commissioner Thompson had simply stated that the water revenue for the first five months of this year totaled \$4,298,401, as against \$3,019,198 for the corresponding period of last year.

Water Ordinance Amended

Kalamazoo, Mich.—The amendment to the water ordinance, which it is hoped will do much toward reducing the waste of water pumped into the city mains, provides that all service pipes in the city, no matter for what purpose installed, be metered. A reasonable time will be allowed after the measure becomes effective to permit meters to be installed, unless which is done the water will be shut off entirely. Minimum rates for water used through the big pipes will be as follows: Eight inch, \$400 per year; six inch, \$200; four inch, \$100; two inch, \$75; one inch, \$50.

Water Main Blown Up with Dynamite

Newburgh, N. Y.—The most sensational "water panic" experienced in this city in many years took place at 3 a. m., June 4, and did not end until 10:30. The panic was caused by the accidental bursting of the 20-inch main water pipe which supplies the greater part of the city. This pipe runs from Monell reservoir and Washington Lake. The accident was caused by the Hudson Terminal Company workmen, who, in excavating the land in the empty lot back of Ross's mills, West Newburgh, placed two sticks of dynamite under the stump of an old tree. When the dynamite exploded it dug up the earth and split a hole in the 20-inch main, which was laid in 1873, and along the line of which the new 30-inch main will run. The break occurred at 2 o'clock, but the city did not feel the effects until about 3 o'clock, when the residents of West Newburgh noticed that there was no force in their water pipes. Superintendent Stanton was notified of the accident. He went immediately to the scene. City Inspector Gilchrist, who was supervising the work of laying the new main, was sent to the Monell reservoir to close the gates and Superintendent Stanton had the gate in West Newburgh closed to stop the water from backing up.

Pumping Station Power Bills Must Continue Large

North Tonawanda.—After very thorough tests of the appliances recently installed on the big electric pumps at the Lockport pumping station in North Tonawanda for the purpose of reducing the output of the pumps, it has been found that they cannot be used with economy, as they tend to work destruction to other parts of the plant. It has been found that if used for more than two hours at a time on any one pump in order to reduce the amount of power used, the big cables in the cellar of the building became heated too much for safety. As an alternative it has been suggested to the water board at Lockport by Chief Electrical Engineer Frank D. Silvernail that a fan be placed in the cellar to cool the cables while the pumps are in operation or that appliances be placed on some other part of the machines.

Denver Water Company Takes Issue from Omaha Decision

Omaha, Neb.—The officers and directors of the Denver Union Water Company are said to be planning a new campaign policy, with the purpose of again appealing to the people for a franchise, and it is pointed out that they will base their operations in the next move on the recent decision of the Supreme Court of the United States in the case of the City of Omaha, which has been ordered to purchase the plant of the Omaha Water Works Company at a valuation of more than \$6,000,000, fixed by a Board of Appraisers. The water company officials do not coincide with the opinion of Attorney Charles S. Thomas and John A. Bush that the Omaha case has no bearing on the situation in Denver. They give the impression that it conveys one important feature, if nothing else, and that is that in its fight with the City of Omaha the water company has kept up the litigation for about seven years. They believe that the fear of long litigation may operate in their favor. It is evident that the Denver company does not intend to give up easily and let the new Citizens' Water Commission fix a purchase price for the city.

Water Company Asks Help of State Health Board

Valparaiso, Ind.—J. H. Brewster, water chemist for the State Board of Health, has come from Indianapolis to establish a water laboratory for the Valparaiso Water Company. The company has been having some trouble with its water supply, and it wishes to find out where the trouble lies. In order to do this it appealed to the State Board of Health and the board decided to send Mr. Brewster to that city to establish a laboratory in which tests may be made.

STREET LIGHTING AND POWER

Poorest Lighted City in the World

Augusta, Ga.—The special gas committee appointed for the purpose of investigating the quality of gas supplied by the Augusta Gas Light Company and the rates charged has submitted its report to Council. Chairman Austin Branch, at the conclusion of the reading of the report, said that the best solution of the trouble was a municipally owned lighting plant. "Whatever the city does in the way of erecting and installing its own gaslight plant," Mr. Branch said, "it must do quickly; for the time will soon be here when the ordinance requiring all overhead wires to be laid underground will step into force, and unless the city is in possession of its own lighting system and is independent of the Street Railway and Electric Company for light it will be powerless to compel compliance with its ordinance. Anyway," Mr. Branch exclaimed with some emphasis, "Augusta is the poorest lighted city in the world. Augusta is behind Jacksonville, Savannah and Columbia. Augusta has an advantage not enjoyed by these cities. Augusta has a canal which generates power, and we in turn receive that power in the form of poor and high-priced light. Enough water is wasting during the night to generate all the light Augusta needs. If we are to act in this matter—erecting and conducting our own lighting plant—we must act right away."

Baldwinsville Lighted Now by All-Arc System

Baldwinsville, N. Y.—Baldwinsville is now lighted with an all-arc light system of electric lights. Under the new contract made last year with the Seneca River Power Company, which is for five years, sixty-six arc lamps at \$73 per lamp per year are furnished, making the cost of the village lighting now \$4,818 per year.

Electric Advertising Sign Given City

Bristol, Tenn.—The firm of Henry L. Doherty, owner of the Bristol Gas and Electric Company, has given the city a 1,600-light sign to be placed at the railroad station advertising the city. The company in cities where it has plants has followed this policy of donating to the city a large electric sign and operating it free.

Want Gas Franchise at Higher Rate

Cleveland, O.—Some time ago the Cleveland Gas, Light and Coke Company, which manufactured artificial gas, consolidated with the East Ohio Gas Company, a natural gas concern. The East Ohio Gas Company is now asking for a twenty-five-year franchise for artificial gas. The artificial gas rate in Cleveland is 75 cents a thousand feet, but the company insists it cannot do a profitable business on that basis, and in its request for a new franchise is asking that it be allowed to charge \$1.05 a thousand feet, with a discount of 10 cents a thousand feet for payment of bills within a certain length of time. While in the city Mr. Marani and Mr. Ling will confer with officials of the Citizens' Gas Company, which has found no difficulty in manufacturing and selling gas on a profitable basis at 60 cents a thousand feet.

Municipal Light Plant a Success

Park Ridge, N. J.—Reports that the municipal lighting plant was to be closed have been denied by Mayor Robert Sibbald. He says: "Our municipal plant, which is operated by water power, has been giving a dusk-to-dawn service since it was established, some three years ago. It has been so highly successful that a contract has been entered into covering the period of five years with the Rockland Light, Heat and Power Company to furnish current over the borough's lines during the daytime, so that continuous service will be given. The limitations of the water power render this necessary, but, as heretofore, the borough will continue to operate its plant and to furnish the night service, in which the profit lies. The constantly increasing number of subscribers, and the desire to give them twenty-four-hour light and power has impelled the Borough Council to make this arrangement for the benefit of its citizens. Its abandonment of the municipal end of the enterprise is as has been contemplated."

FIRE AND POLICE

Giving Out Interviews Prohibited

Hutchinson, Kan.—Hereafter any member of the police force who shall give out information to the newspapers, or any individual other than members of the City Commission, shall be subject to peremptory dismissal. This was made plain in an order promulgated by Mayor Martin last week, in which he fully outlined the duties of the public peace servants.

City Has Many "Fire Traps"

Los Angeles, Cal.—Alleged poor construction of buildings in the congested value area of Los Angeles and the lack of automatic sprinkler installations are subjects of a long report by the National Board of Fire Underwriters, following investigations made by their engineers in the Southern city. The report declares that the fire hazard is great because of these conditions. Many blocks here are "fire breeders," according to the underwriters. A compliment is paid the Los Angeles Fire Department, and the report says the water supply is ample.

Police Dog Patrol

Mineola, N. Y.—The Board of Supervisors has authorized the Sheriff to spend \$300 in the purchase of a pair of bloodhounds. The hounds are to be used to run down burglars or other lawbreakers. The adoption of a system of patrol by police dogs similar to those used in suburban sections of New York is also under consideration.

Test New Fire Appliance

Newark, N. J.—After passing a series of tests at the Fire Department training station, an automatic valve regulator, invented by Frank Hoffman, of the Cincinnati Fire Department, was tentatively adopted for use in this city. It is said that the valve will do much to aid the work of the Department. The appliance, which can be attached to any of the engines, regulates any flow of water, which can be switched from one line to another without the increased pressure causing the hose to burst or wriggle as heretofore. With present devices an engine pumping into two lines of hose cannot switch the flow of one of its lines to the second without some risk being incurred. The tests were conducted by Hoffman, under the supervision of Chief Astley and Commissioners Lagay, Weber and Burke.

Special Patrol for Incendiarists

New Haven, Conn.—Police Chief H. D. Cowles says that in view of the repeated attempts to burn down downtown business blocks, a special police squad may be put into commission by the Police Commissioners. The plan, if carried out, will consist of detailing half a dozen or more plainclothes men, wearing noiseless shoes, whose duty it shall be to patrol the business section every hour between sunset and sunrise. It is also likely that the two police dogs may be taken off their outlying beats and temporarily shifted to the downtown section.

New Site for Firemen's Memorial

New York, N. Y.—It has been decided to erect the Firemen's Memorial at Riverside Drive and One Hundredth street, instead of at Union Square, which had been previously selected, as stated several months ago. The Municipal Art Commission had approved of the site at the north end of Union Square, but when Park Commissioner Stover assumed office by appointment of Mayor Gaynor he recommended that the memorial be placed at the south end, as he desired to reserve the north end for other purposes. This location was disapproved by the Art Commission, however, on account of the narrowness of Fourteenth street for its amount of traffic, and as it would also necessitate the removal of Lafayette's statue. The proximity of the memorial of Washington, his bosom friend, would make the latter move undesirable. It was therefore decided to select the site on Riverside Drive which is located on a knoll which slopes gently on all sides for the Firemen's Memorial. It will be necessary to alter somewhat the design of Mr. Magonigle by taking off portions of the sides, although the main design will not be affected.

Civil Service Reform Association Replies to Croker

New York, N. Y.—The characterization of Civil Service firemen by Chief Croker as a band of weaklings has stirred the Civil Service Reform Association to make a defense of the system of mental and physical tests for appointment to the Department. In a statement Elliot H. Godwin, Secretary of the Association, attacks the Fire Chief on the grounds that he misstated the importance given to physical fitness in selecting new firemen, and underestimates the efficiency of his own fire fighters. He said:

Chief Croker chose a strange time to condemn the system which led to the appointment of the two men who bravely went to their death in the performance of their duty.

New Yorkers have been proud of their Fire Department. The officers appointed through competitive methods have proved capable. The standard of discipline has been high and the esprit de corps strong. Yet Chief Croker, with all the prestige attaching to the Chief of the largest Fire Department, heralds to the country at large that the majority of the men in this department are weaklings.

The physical tests are given a weight of 50 per cent, and not 25 per cent as stated. The strength tests are as severe as it is possible to make them and at the same time secure a sufficient number of men to meet the needs of the department. It is the physical and medical examination which throws out the great body of applicants, not the mental examination.

Mr. Godwin recommends a revision of the mental tests so that they will merely give a view of the applicant's general intelligence.

San Francisco Auxiliary Fire System

San Francisco, Cal.—Acting City Engineer Connick has made the following statement regarding the auxiliary system for fire protection:

Pending the construction of the Twin Peaks reservoir and the remainder of the system, the pipe lines of the first district will be supplied with water by the fire boats from stations at the foot of Powell street, Grant avenue, Francisco street, Greenwich and Washington streets. The pipe lines will vary in diameter from ten to eighteen inches. The hydrants to be set upon them will be eight inches in diameter, each hydrant being supplied with three 3½-inch vents, capable together of discharging 6,000 gallons per minute, which will be equal to the work of five fire engines. There will be 229 hydrants distributed on both sides of all the streets traversed by the pipe lines. In the high-valve districts there will be eight hydrants to a block, and four elsewhere. Along Market street from the water front to Powell street there will be forty hydrants. The pressure to which the hydrants will be subjected is 325 pounds per square inch. This is the maximum pressure. All of them, together with the appurtenances, have been tested to 650 pounds to the square inch.

Eighth Annual Inspection of Syracuse Firemen and Police

Syracuse, N. Y.—The men of both the Police and Fire Bureaus who turned out June 9 for the eighth annual inspection and parade were spick and span for the occasion and made a fine impression on both officials and public, who saw them at drill, on inspection or in parade. The annual event was directed by Commissioner of Public Safety H. E. Hessler and Deputy Commissioner S. T. Friedrich. Mayor Schoeneck, Comptroller M. E. Monohan, City Treasurer De Forest Settle, Commissioner of Public Works Frank M. Westcott, members of the Common Council and other city officials made up the inspecting party. The drill of the four battalions of police under command of Lieutenant Jacob Warner was first witnessed at Clinton Square. Mayor Schoeneck and the inspecting party were then driven in carriages to Fayette Park, which was practically encircled by the fire companies of the city with their apparatus. The engines gleamed in the sunlight like a brand new silver service, and the attire of the officers and men, their apparatus and the gallant, well-groomed fire horses were all voted faultless. Chief John P. Quigley was congratulated by the officials on the showing. Thousands applauded the parade of the two bureaus, which formed at Fayette Park, passed through the streets in the center of the city and was officially reviewed from the outside balcony of the Wieting before it disbanded. Captain Thomas W. Quigley rode at the head as marshal on a coal black charger; then followed a mounted squad of ten men, who made a fine appearance.

Policemen's Jobs Begging

Washington, D. C.—According to Major Richard Sylvester, there is no one in the whole District of Columbia who has lived here two years who wants to be a policeman. He has reported to the Commissioners that he badly needs two new policemen to fill vacancies caused by removals from the force, and that the only two eligible applicants have not lived here for two years, as is required. The Commissioners have taken his recommendation to waive the period of residence and admit the two lone eligibles to the force.

GOVERNMENT AND FINANCE

Executive and Seven Aldermen in Contempt of Court

Helena, Mont.—With its Mayor fleeing to his ranch in central Montana to escape an order of court committing him to jail for contempt, and with seven Aldermen likely to share the same fate, the city administration of Helena is facing an embarrassing predicament. The order of commitment, issued by the District Court, followed the action of the Mayor and Council in removing from the police force a captain and several other officers in defiance of the court's orders. The order reads that Mayor Edwards and seven Aldermen who voted to support him shall remain in jail until they change their minds and reinstate the police officers.

Want Commission Government in Rochester

Rochester, N. Y.—Commission government for New York State, but Rochester in particular, is the object of a movement now under way in this city. It started in discussions of commission government in the City Lunch Club recently and is now taken up independently of that body and a committee of 100 is being organized to push the matter to a finish. Among those who are active in the matter are Nelson E. Spencer, Rev. Paul Moore Strayer, Lester Fisher, Professors Fairchild and Burton, of the University of Rochester. Many men of all parties have been approached for their opinions on the commission form of government for cities and the prime movers in the matter are careful to assert that it is a non-partisan movement.

City Hall—Commission Style of Architecture

Des Moines, Ia.—Unlike most municipal buildings, all the working space of Des Moines' new City Hall, the cornerstone of which was laid June 14, is on one floor. In other words, the main floor, which is two stories high, is one immense room, in which all the city's business is done. At each corner of this big room are the private offices of the four commissioners, while just to the south is the Mayor's private office. The building is the first ever planned for the commission form of government in cities. The aim of the architects has been to design it so as to make it economical in construction and arrange the working space in such a way that anyone who has business at the City Hall can go there and not feel lost.

Mayor of Berkeley Advises Stockton

Stockton, Cal.—Mayor Hodghead of Berkeley is strongly in favor of the commission plan of municipal government, and advised Stockton to adopt it in the new charter, which is to be outlined soon and put in shape for the adoption of the next Legislature. In his address before the Schoolmasters' Club at its first annual banquet, Mayor Hodghead pointed out the advantages to be derived from the commission form of city government, and urged the people of Stockton to adopt a charter along these lines. He declared that under this charter office holders have no political friends to reward nor enemies to punish. Aspirants for positions under the charter as employees are unknown, as it is known to all such seekers that the men in command are under no obligation to any faction, clique or constituency, and that merit alone will determine the selection to be made. Mayor Hodghead declared that this form of city organization is a solution of civic problems and places the municipality on a plain business basis. Under the system the Mayor has a vote, but no veto, and the citizens have the right at all times of the initiative, referendum and recall.

Keep Close Tab on Inspectors

Tacoma, Wash.—The Tacoma Department of Public Works proposes to know whether street inspectors employed by the city are "on the job" each day as they are supposed to be. One of the hard and fast rules just laid down by the Department, under the supervision of Commissioner Owen Woods and Chief Clerk A. F. Metzger, is that every inspector employed—and there are about forty—shall each day send in a report certifying that he has worked eight hours, stating the exact location of his service and the class of work inspected. Blanks have been prepared and within a few days the inspectors will be sending their reports to the Commissioner's office at the close of each day.

STREET CLEANING AND REFUSE DISPOSAL

Adopts New Plan of Cleaning Downtown Streets

Elmira, N. Y.—Superintendent of Public Works G. Henry Roberts has instituted a new system for cleaning the paved streets in the downtown districts, and it is hoped that it will prove effective, and be of more benefit than heretofore. The paved streets in the downtown section are sprinkled twice a day. The sprinkling wagon starts from a point near Market street on Lake street about 6 o'clock each morning, and covers the remaining portion of Lake street to Water street, thence up Water to No. 2 Fire Station or thereabouts. After this is done the streets which have been sprinkled are swept. Then again at noon the sprinkling wagon covers this territory, but no sweeping is done. In the afternoon the regular scraping system is started. With this plan Superintendent Roberts expects to keep the streets of the business section cleaned and free from dust. Several merchants are complaining about the condition of Water street, while others say with the new plan under way the streets will be cleaner than ever.

Emergency Derrick of New York Street Cleaning Department

New York, N. Y.—The illustration shows a derrick mounted on a wagon which is used by the New York Street Cleaning Department for a peculiar purpose. The ashes and some other rubbish is hauled mostly in one-horse carts to runways located on wharves alongside which scows are moored. The carts dump directly down into the



DERRICK USED BY STREET CLEANING DEPARTMENT

scows. Every now and then, owing to an unruly horse or careless driver, a cart is backed over into the scow. The derrick wagon is sent for and horse and cart, usually without serious injury, replaced on terra firma. The entire framework of the derrick is made of steel, as is the platform of the wagon; hence a three-horse hitch is used to draw it.

Good Progress with Crematory

Portland, Ore.—Pronounced progress is being made on the new 240-ton municipal garbage crematory, one of the most urgently needed of the civic institutions of Portland. In less than three weeks the excavations for the basement of the structure, which occupies a space of 65 x 94 feet, have been completed; the basement is finished to the first floor level and all of the concrete is in place ready to receive the superstructure. The building will be absolutely fireproof, with not a splinter of wood except in the doors and window frames. The framework is of skeleton concrete with curtain walls of brick. The roof will be of steel and tile. The huge chimney, which will rise to a height of 162 feet, will be of radial brick. Sufficient headway has been made on the building so that Harry N. Napier, superintendent of the crematory, says that the cornerstone laying ceremony can be held some time this month. Under the terms of the contract the Public Works Engineering Company, builders, must have it completed not later than November 10. Superintendent Napier feels more than confident that the plant will be ready for operation before that time.

RAPID TRANSIT

Tax Board Increases Street Car Assessment

Indianapolis, Ind.—The State Board of Tax Commissioners has increased the assessment of both the Indianapolis Street Railway Company and the Indianapolis Traction and Terminal Company, though the increases in each instance are small. The total assessment of the Indianapolis Street Railway Company, as fixed by the Board this year, is \$5,445,525, as against \$5,390,515 last year, the increase being \$55,010. This year's assessment of the Indianapolis Traction and Terminal Company is fixed at \$1,301,654, as against \$1,255,064 last year, the increase being \$46,590. The total increase in the assessment of the two companies this year over last year is \$101,600. The Indianapolis Street Railway Company has 111.28 miles of main track, the same as last year. In 1909 this track was assessed at \$46,500 a mile, making a total of \$5,119,520. This year the assessment is raised to \$47,000 a mile, making a total of \$5,230,160, the increase this year being \$110,640. No change was made in the assessment of the 5.41 miles of sidetrack. This is assessed this year at \$2,000 a mile, the same as last year, making a total of \$10,820.

Interborough Company Offers to Build New Elevated Lines

New York, N. Y.—The Interborough Rapid Transit Company, through President Shonts, has presented to the Public Service Commission a plan for certain transit improvements, which will be the principal part of the company's long-expected proposal to the Commission and the city government. The suggestions included only elevated third-tracking and extensions and an offer to operate the so-called Steinway tunnel on a 5-cent transfer basis, with a connection with the present subway.

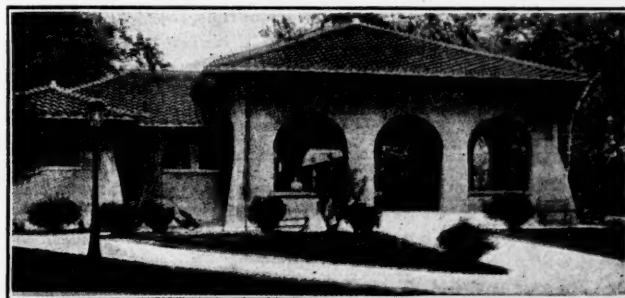
MISCELLANEOUS

Boston Is Loser on "City Record"

Boston, Mass.—The "City Record," Boston's official municipal publicity organ, was one of the financial failures of the past administration, according to City Auditor Mitchell's annual report for the past fiscal year. The publication, including the salary of the editor, for the five months under the late Mayor Hibbard's administration cost the city \$460.70 more than the total amount of money received for sales and advertising. The total cost for publication was \$4,679.70, while the receipts amounted to \$4,219. Of the receipts \$3,930.10 was received for advertising from the various departments, while the sales and subscriptions amounted to only \$288.90.

Gala Day at Louisville Parks

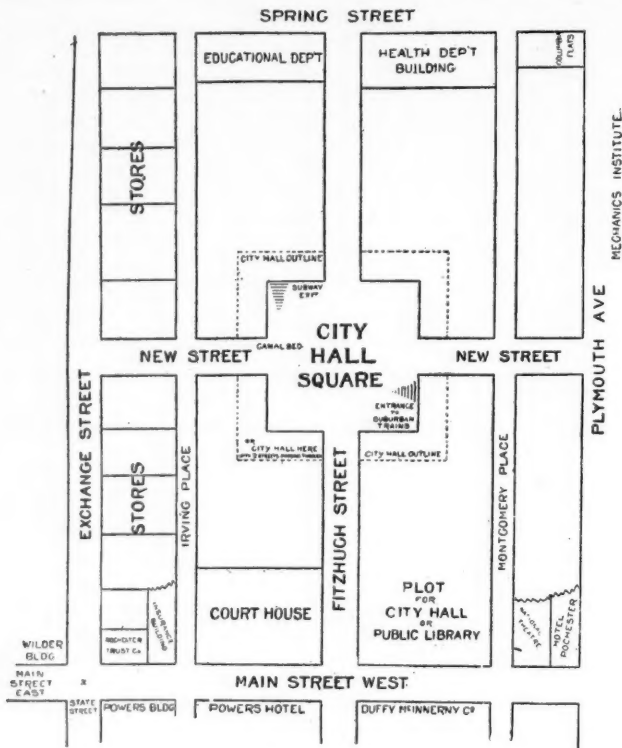
Louisville, Ky.—One of the greatest events in the history of the Louisville park system was that which took place when 3,000 citizens, old and young, assembled at Central Park to assist in the dedication of the field houses and birds and publicly acknowledge the generosity of Major Alexander Henry Davis, whose philanthropy made the event possible, and to accord proper recognition to the years of labor performed by the Hon. Charles Wickliffe Beckham in the gathering of the birds, which made it possible for Louisville to now possess one of the finest collections of native birds' skins perhaps to be found in this country, outside of the Smithsonian Institute in Washington.



NEW FIELD HOUSE, CENTRAL PARK, LOUISVILLE

Proposed Civic Center

Rochester, N. Y.—A civic center proposed by R. A. Prennett would include the square bounded by Exchange street on the east, Main street on the north, Plymouth avenue on the west and Spring street on the south. This contemplates the abandonment of the Erie Canal in 1915, thus



SUGGESTION FOR ROCHESTER CIVIC CENTER

permitting a new street to be opened from Exchange street to Plymouth avenue. The intersection of South Fitzhugh street and this new street in the canal bed marks the exact center of City Hall Square, around which all the public buildings are, in the course of years, to be grouped. This involves, too, the ultimate removal of the present City Hall Building, after it has completely outlived its usefulness and the time comes to tear it down. The Monroe County Court House already is placed permanently and in the right position in this civic center. Other buildings that are located are merely suggestive. This center can utilize any one of four sites that already have been proposed for the new City Hall. The author suggests the location of the new hall on the block between Fitzhugh street and Montgomery Alley, facing on Main street. He also offers an alternative suggestion for a public library on this site.

Preserving Old Piers

Washington, D. C.—Captain Hannum, the engineer officer in charge of the improvement of the Potomac River, has taken steps to prevent further deterioration of the old piers of the Aqueduct Bridge across the river at Georgetown. Examinations made about two years ago showed that a gradual deterioration was in progress in the masonry of the piers below the water line. The principal defects discovered were cavities in the faces of the piers caused principally by stones dropping out during freshets. The cavities were usually repaired by being filled with concrete in bags. These bags were put in place by divers. In several instances the repaired portions were strengthened by placing a riprap in front of them. Three of the old piers, numbered 1, 4 and 5, were so badly disintegrated that it was found necessary to remove them altogether and replace them with entirely new piers. To determine the present condition of the structure, Captain Hannum recently ordered a thorough examination of the subaqueous portions of the old piers. It was found that with the exception of the north abutment the masonry apparently had suffered little damage since the last previous examination in the fall of 1908, when all defects were repaired. The defect in the north abutment consisted of a cavity at the up-stream corner, approximately 4 by 6

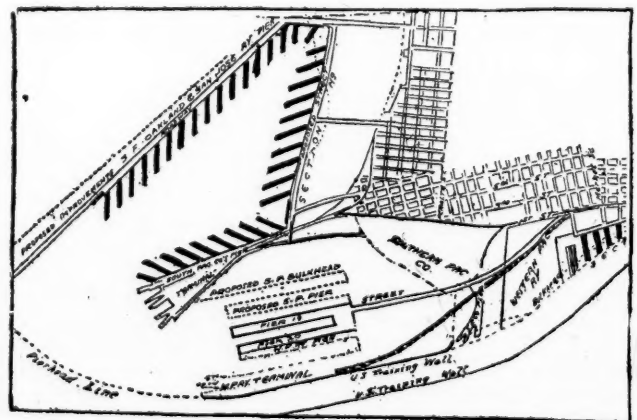
feet on the face, and extending about three feet into the abutment, at a depth of about ten feet below the water line. From the edges of this cavity for about two-thirds of the length of the face of the abutment the joints were all more or less open. Captain Hannum said the masonry apparently contained a large proportion of small stones which had gradually dropped out of position. Under his direction the cavity was repaired by a diver in the usual manner. It was filled with concrete in bags and a facing of the same was built in front of the repaired portions above and below the hole. Other portions of the masonry where the joints were open were faced in a similar manner in order to prevent further erosion. Captain Hannum said that the work of repairing the piers will be completed this month and the piers left in as good condition as practicable. Soundings and probings will be made around all the old piers with a view to preparing estimates for more extensive and permanent repairs.

City Swimming Pool Opens

New York, N. Y.—Borough President Alfred E. Steers opened the new public bath and swimming pool at President street and Fourth avenue, Brooklyn, May 14. It is said to be one of the finest buildings for its purpose in the country, and was erected by the city at a cost of \$168,000. The pool is the chief feature of the bath, and is the only public swimming pool in the city. It is 60 feet long, 40 feet broad, and its depth varies from 3½ feet at one end to 6½ feet at the other. It contains 90,000 gallons of water.

Plans for Oakland's Western Water Front

Oakland, Cal.—Ways and means whereby the municipality may secure all of its rights on the western water front without further litigation of the nature of that which has existed for the last fifty years, and making provision for the immediate commencement of the work of improvement by the city, are recommended in a communication filed with the Board of Public Works by City Engineer Fred C. Turner. He recommends a speedy manner of settling the controversy on the bay shore that the application of the Key Route Company for its 1,000-foot fairway be granted, with certain restrictions; that the low tide line be immediately settled through agreement, and that the Southern Pacific Company be granted a franchise in accordance with the terms of the "Memorandum of Agreement." As regards the improvement of the water front, the City Engineer is of the opinion that the general plan should be based on a study of the whole bay shore from the Oakland Harbor entrance to at least the northern boundary of Alameda County, as, sooner or later, the city will include that entire territory. In a general way the shore line and the pier headline are parallel and at right angles to the streets leading to the water front north of Thirty-second street, but at an angle to those to the south. The Key Route Pier and the Berkeley city wharf are at right angles to the shore line, this distance being the shortest to the new pier headline and deep water along the direct line of traffic. Turner suggests that an arrangement of railroad terminals on this front be made to consist of strips 1,000 feet wide by 16,000 feet long, extending out to the pier headline north of and parallel to the Key Route Pier, with ample waterways between them.



PLAN FOR IMPROVING OAKLAND WATER FRONT

LEGAL NEWS

A Summary and Notes of Recent Decisions—Rulings of Interest to Municipalities

Contract for Resurfacing Pavement—Mistake

Fullerton et al. vs. City of Des Moines et al.—All the preliminary negotiations for paving a street with asphalt on the foundation of a wooden block pavement, such foundation to be first brought to subgrade with additional concrete, proceeded on the theory (1) that the amount of concrete needed therefor was not ascertainable prior to letting the contract; (2) that compensation therefor should be fixed separate and apart from that for laying the asphalt, and in a way to obviate payment for more than required; (3) that the resolutions, proposals, and specifications were in harmony with such a course; and (4) the bids were exacted with the distinct understanding of all parties that separate prices be paid for laying the asphalt and for raising the foundation with concrete—but in the preparation of the contract subsequently executed the intention of the parties, as thus manifested, was not expressed. Held, that the contract would be reformed to give effect to what was intended, though one of the parties thereto was a city.—Supreme Court of Iowa, 126 N. W. R., 159.

Exemption from Taxation—Assessments

Caverly-Gould Co. vs. Village of Springfield et al.—Where a town voted to exempt certain business organizations from taxation for ten years, such vote precluded a village within the town from levying general taxes on such exempt property, but did not preclude the levy of special assessments thereon for municipal improvements; "general taxes" being based on the fact that the government must have revenue, and on the principle that all citizens and property within its jurisdiction should contribute, without special benefit, while "special assessments" are based on the theory of a special benefit to the property assessed, by means of a local improvement.—Supreme Court of Vermont, 76 A. R., 40.

Defective Streets—Action—Notice

Doyle vs. City of Troy.—Laws 1906, providing that a city shall not be liable for injuries to the person unless a claim in writing shall within three months after the accident be presented to the Common Council and served on the Mayor or City Clerk, and notice of intention to sue be served upon the Corporation Counsel, nor unless an action shall be commenced within one year after the accident, though superseding Laws 1886, providing that the notice of intent to commence an action must be given within six months after the cause for action, does not require that the notice of intention to sue shall be served on the Corporation Counsel within three months.—New York Supreme Court, 122 N. Y. S., 704.

Variance Between Resolution and Ordinance

City of Marengo vs. Eichler et al.—Under Local Improvement Act, providing that the Board of Local Improvements shall originate a scheme for any local improvement by adopting a resolution describing it, which shall fix a time for the public consideration thereof, and, if the improvement be not abandoned, then the Board shall submit to the Council an ordinance prescribing the nature, character, locality and description of the improvement, and whether the same shall be made wholly or in part by special assessment or special taxation of contiguous property, the resolution has nothing to do with the method of payment for the improvement, and hence there can be no variance between a resolution and ordinance, because the resolution seems to authorize payment by special taxation while the ordinance provides for special assessment.—Supreme Court of Illinois, 91 N. E. R., 758.

Bursting of Water Works Main—City Liable for Injuries

Messersmith vs. City of Buffalo.—A city is liable for the negligence of its employees in constructing and maintaining a water works to supply consumers, so that it would be liable for injuries resulting from the bursting of a main by reason of negligently making a connection for a consumer.—Supreme Court of New York, 122 N. Y. S., 918.

Tax Sales—Implied Powers

Wakefield vs. Brophy et al.—Port Chester Charter provides that sales for non-payment of taxes shall be made at least once in two years, but that sales may be ordered by the Trustees at any time they deem necessary. Section 10 gives the Board of Trustees power to collect, by civil action, in the name of the village, any tax or assessment which shall be returned as unpaid or uncollected. Held, that, it not being impossible to ascertain from the books the amount of unpaid taxes and assessments to enable the officials to provide for a tax sale or for an efficient prosecution by actions for the recovery of unpaid taxes and assessments, and such labor not being of such a complicated character that the officials could not obtain the information which could be obtained by an expert accountant, it being merely clerical work, authority to employ an expert accountant was not given by the charter by implication as incident to the duties imposed upon the Trustees to manage the finances of the village.—Supreme Court of New York, 122 N. Y. S., 632.

Contractor's Bonds—Limitation

Underwood vs. Gendell, City Solicitor.—A provision of a city ordinance, limiting the time for suing on a bond, given to the city by a contractor to secure sub-contractors, to two years from the date of the bond, is not unreasonable, and applies to all sub-contractors whose rights of action accrued after the ordinance was passed.—Supreme Court of Pennsylvania, 75 A. R., 1092.

Contracts—Municipal Building

Wheeler vs. City of New York.—Laws 1907 authorized the Commissioner of Bridges of New York City to construct a municipal building with the approval of the Board of Estimate and Apportionment, provides that the plan and specifications shall be approved by the Board of Estimate, and that the provisions of the New York City Charter shall apply to the letting of the contracts, and so far as consistent therewith to the erection of the building. Held, that only the provisions of the charter itself apply, and that the approval of the plans by the Board of Estimate is sufficient, notwithstanding that the building code, enacted by the Board of Aldermen under the authority of the charter, provides for the approval of all plans by the Superintendent of Buildings, and that such code shall apply to buildings, both municipal and private.—Supreme Court of New York, 122 N. Y. S., 627.

Milk Ordinance Invalid

Bear et al. vs. City of Cedar Rapids et al.—An ordinance required milk dealers to apply to the City Board of Health for a license, stating where the cows were kept, whereupon the applicant's cattle should be subject to inspection by the city's veterinarian, and provided that the Board, after investigation, whether from a consideration of such report or from other sources, should determine what applicants may be entitled to a license, and license the persons so selected. Held, that the ordinance was invalid as violating the guaranty of equal opportunity under the law, by authorizing the Board to arbitrarily refuse a license to some while granting it to others.—Supreme Court of Iowa, 126 N. W. R., 324.

Sewer Extension Beyond City Limits

Deyo et al. vs. City of Newburgh.—Under Laws 1893, authorizing the construction of a sewer in the city of Newburgh, and providing that the Common Council could enter upon and take such lands as might be necessary, the city had no authority to acquire an easement from the owner of land outside the city limits within the limits of an adjacent town, nor to construct the sewer therein.—New York Supreme Court, 122 N. Y. S., 835.

Defective Street—Action—Misconduct of Counsel

Hughes vs. City of Detroit.—In an action against a city for injuries to a pedestrian on a defective street, the argument of plaintiff's counsel, inquiring whether the jury would take all the money in the city and have a relative go through what plaintiff had gone through with, and that the jury would not take the injury for all the money that could be piled up in front of them, etc., was prejudicial, because inflammatory.—Supreme Court of Michigan, 126 N. W. R., 214.

NEWS OF THE SOCIETIES

League of American Municipalities.—The complete program of the fourteenth annual convention of the league, which will be held in St. Paul, August 24 to 26, inclusive, has been announced by John MacVicar, of Des Moines, Ia., secretary of the league. The convention will bring together civic officials from all parts of the United States. Invitations will be extended to Mayors and other officials of Minnesota and Northwestern cities and towns to be present. The program, which is comprehensive and embraces many live municipal problems, is as follows:

Address of welcome, Herbert P. Keller, Mayor of St. Paul; response and president's address, David E. Heineman, Grand Rapids, Mich., president League of American Municipalities; "Home Rule for Cities," J. Barry Mahool, Mayor of Baltimore, Md.; discussion, James C. Dahlman, Mayor of Omaha, Neb.; Thomas Maloney, Mayor Council Bluffs, Iowa; "The Government of Cities by Commission," T. K. Powell, Fort Worth, Tex.; discussion, D. W. Love, Mayor of Lincoln, Neb.; C. L. Davidson, Mayor of Wichita, Kan.; Grand Conard, Mayor of San Diego, Cal.; John MacVicar, Des Moines, Iowa; "Simplify City Government," Samuel A. Carlton, Mayor of Jamestown, N. Y.; "City Art Museum—How to Make It Valuable to the People," A. H. Griffith, Director, Detroit, Mich.; Museum of Art; "Street Paving Problems," Martin Behrman, Mayor of New Orleans; same subject treated from maintenance standpoint, Frank T. Fowler, Superintendent of Streets, Chicago, Ill.; E. R. Schreiter, Detroit, Mich.; "What Cities Are Doing and in What They Excel," question box, papers, subjects to be announced later, Robert A. Maddox, Mayor of Atlanta, Ga.; John A. Gundlach, President St. Louis Common Council.

North Carolina Good Roads Association.—The annual meeting of the association was held at the Tanymore Hotel on Wrightsville Beach. The session was called to order by Dr. James Hyde Pratt, Chapel Hill, secretary of the organization. Alderman Fred W. Bonitz, Wilmington, delivered the address of welcome. M. L. Shipman presented a paper on "Bond Issues for Good Roads." "County Road Work" was discussed by C. E. Foy, New Bern, president of the State Association of County Commissioners. Other addresses were: "Inland Transportation," by John H. Small; "Assistance of the Press in the Good Roads Movement," H. B. Varner; "The Need of Road Engineering," Prof. W. C. Riddide; "Good Roads Problems," Jos. Hyde Pratt, State Geologist.

Georgia Federation of Good Roads Authorities.—About forty Commissioners attended the annual convention, Savannah, June 8. Mayor Tiedeman delivered the address of welcome. Judge W. F. Eve, Augusta, president, responded. J. B. Pennypacker, Department of Agriculture, delivered an address reviewing good road work in other States and giving advice as to local conditions. Prof. C. H. Strahan, University of Georgia, spoke on the co-operation of State and county authorities, and offered to make free tests of road materials from anywhere in the State. President Frank C. Battey, of the Savannah Automobile Club, spoke from the automobilist's point of view. Judge Eve and the other officers were re-elected. Albany was chosen as the next meeting place.

Sanitary Officers' Association of Monroe County, New York.—For the purpose of enforcing health laws in the county, and to bring about State

laws for improvement, the Health Officers of the nineteen towns in the county met June 10 in Powers' Hotel, Rochester, and formed the Sanitary Officers' Association of Monroe County. Officers were elected as follows: President, Harry J. Mann, of Brockport; vice-president, Dr. Royal E. Cochrane, of Penfield; secretary, Dr. Montgomery E. Leary, of Gates; treasurer, Dr. J. E. Ottoway, of Charlotte; County Delegate to State Association, Dr. P. D. Carpenter, of Pittsford.

Police Chiefs, Sheriffs and Prosecuting Attorneys of Michigan.—The annual convention was held at Bay City June 7-9. The social features of the meeting shared with the State Firemen's Association, which was also in session there. Henry Kinney, Sheriff of Bay County, and president of the association, read his annual report. Charles W. Hitchcock, Prosecuting Attorney, Bay City, read the report of the committee on legislation. Leander H. Harris, Ogemaw County, read a paper on "The Prosecuting Attorney Out of Court." Other papers were as follows: Otis Fuller, Warden of Ionia Reformatory, "The Enforcement of Law and the Muckraker"; "George L. Schultze, Saginaw, "Relation of the Sheriffs of Several Counties to Each Other"; Harvey O. Carr, Superintendent of Police, Grand Rapids, "The Line of Duty of an Officer"; Patrick Kain, Superintendent of Police, Saginaw, "The Sweat Box"; Charles A. Jahrans, Iosco County, "Duty of a Citizen to the Enforcement of the Law"; G. A. Elliott, Marquette, "The Purpose of a Penal Institution." The association will meet next year in Kalamazoo. The election resulted as follows: President, A. L. Campbell, Sheriff, Kalamazoo; secretary, George V. Weimar, Prosecuting Attorney, Kalamazoo; vice-president, Henry Kinney, Bay City, retiring president.

League of Third-Class Cities of Pennsylvania.—The committee named by Mayor Weaver, of York, to arrange for the holding of the annual convention in York, beginning August 23 next, have been called to hold a general meeting in Council Chambers, when the work of each committee will be outlined. It is deemed advisable that the first meeting shall be composed of all the committees so that every member of each committee can be made acquainted with the general outline of the preparations to be made.

New England Water Works Association.—The June outing will be held at Providence, R. I., June 22. According to the programme, at 10:30 o'clock delegates and friends are to take boat at Hale Wharf, South Water street, for sail down Narragansett Bay, and at 12 o'clock there is to be a meeting of the executive committee on the boat, and at 12:30 o'clock there will be a dinner at Field's Point. At 1:45 o'clock the boat is to leave Field's Point for Providence. Field's Point is only a short distance from the Providence sewage precipitation tanks, thus giving parties so desiring an opportunity to visit them. At 2:15 o'clock special trolley cars will leave Hale Wharf for Pettaconset pumping station of the Providence water works, and return at 4:45 o'clock. Willard Kent, Narragansett Pier, R. I., the secretary, states that it will add greatly to the interest of the annual convention if the members will co-operate with Mr. Woodburn, committee on exhibits for the Rochester meeting. He will gladly answer any inquiries along the line of the circular which has been issued.

Illinois Association of Highway Commissioners.—Bloomington has been selected for the first annual convention of the State Association of Highway Commissioners, and September 27 has been set as the day of meeting. This association has just been organized at Aurora, where Highway Commissioners in cities over 15,000 in Illinois met. The election of officers resulted in the choice of George Heywood, of Joliet, president, and William Beel, of Joliet, secretary. A committee of three composed of G. H. Rice, of Bloomington, William B. Hall, of Joliet, and City Clerk William Flanagan, of Aurora, was appointed to draw up an amendment to the Price bill, which deprives the Highway Commissioners of one-half the road and bridge tax collected within the city limits.

Mayors of Third Class Cities of New York.—The preliminary program for the meeting at Schenectady, June 23-24, has been announced as follows:

Thursday, June 23, 10:30 a. m., Mohawk Theater. Charles C. Duryee, Mayor of Schenectady, presiding. Opening address. "The Protection of Life and the Protection of Property—The Health Inspector, the Policeman and the Fireman; Hon. Charles C. Duryee, Mayor of Schenectady. General discussion. "The Prevention of Disease by the Elimination of Dust"; Frederick L. Hoffman, Statistician of the Prudential Life Insurance Company. General discussion. "Housing and Health in Cities"; Lawrence Veiller, Secretary of the National Housing Association. General discussion. Session adjourned. Luncheon at the General Electric Works. The conference will be entertained at luncheon by the General Electric Company in the "Works Restaurant."

2 p. m.—Lecture room in the Fire Department Building, General Electric Works, G. E. Emmons, general manager of the General Electric Company of Schenectady, presiding. "What People Can Do Through Their Municipality," Rev. George R. Lunn, D.D., Schenectady. "The Moral Responsibility of the Community for the Protection of Health and Life"; Rt. Rev. Monsignor J. L. Reilly. "The Vital and Economic Waste of Occupational Disease"; Prof. C. E. Winslow, College of the City of New York and the American Museum of Natural History, New York City. General discussion. Visitation and inspection of sanitary appliances in the General Electric Works.

8 p. m., Mohawk Theater, Hon. Albert R. Kessinger, Mayor of Rome, presiding. "Municipal Aspects of Rest and Recreation"; Dr. Luther Halsey Gulick, president of the National Playground Association. General discussion. "Municipal Duties in the Conquest of Tuberculosis—What Should the Budget Cover?" Dr. Livingston Farrand, executive secretary of the National Association for the Study and Prevention of Tuberculosis. General discussion. "National Aspects of the Health Problem"; Hon. Robert L. Owen, United States Senator from Oklahoma.

Friday, June 24, 11 a. m., Mohawk Theater, Dr. Benjamin H. Ripton, Dean of Union College presiding. "The Municipal Care of the Insane"; Dr. Albert Warren Ferris, president State Commission on Lunacy. General discussion. "Economic Losses to Municipalities from Preventable Diseases"; Prof. Walter F. Willcox, Cornell University. General discussion. Session adjourned.

2:30 p. m., Mohawk Theater, Hon. Edward Schoeneck, Mayor of Syracuse, presiding. "The Relation of State Health Authorities to Local Health Authorities"; Hon. Eugene H. Porter, State Commissioner of Health. General discussion. "How to Get Competent Health Officers"; Dr. George W. Goler, Health Officer of Rochester, N. Y. General discussion. "The Organization and Work of an Effective Health Department"; Hon. Homer Folks, secretary of the State Charities Aid Association. General discussion. Session adjourned. Banquet in Red Men's Hall, Ferry and Liberty streets.

8:30 p. m., Red Men's Hall, Hon. John J. Irving, Mayor of Binghamton, presiding. "The Greatest Problem of Modern Sanitation"; Dr. Woods Hutchinson, New York City. "What the Small City Can Do to Protect Its Food Supply"; Dr. Harvey W. Wiley, chief of the Bureau of Chemistry, Department of Agriculture, Washington, D. C. "Obligations and Opportunities of Local Officials"; Prof. Charles Zueblin, Boston, Mass. General discussion.

Michigan Firemen's Association.

More than 300 firemen attended the thirty-sixth annual convention, Bay City, June 7-9. The annual parade of the local Fire Department took place on the opening day and the visiting firemen joined in it. Hugo R. Delfs, Lansing, opened the convention. The report from Chief Joseph Day, of Cadillac, and Chief J. T. Donovan, of Charlotte, the two delegates who last year were elected to attend the International Chief Engineers' meeting at Grand Rapids, was submitted. Assistant Chief Charles T. Crampton, of Bay City, then read a carefully prepared paper on "Firemen as Public Servants: Their Duties, Danger Attending Fires, and Compensation." The topics discussed were as follows: "Safe and Sane Handling and Storage of Gasoline"; "Will the Chemicals Now in Use by the Fire Departments Extinguish Gasoline Fires?" "The Necessity of Fire Extinguishers, Fire Alarm Boxes and Compulsory Fire Drills in All School Buildings"; "Lumber Fires, Preventing and Combatting"; "What Can Be Done Relative to the Pensioning of the Firemen in the State of Michigan?" "Forest Fires: the Best Method of Extinguishing and the Availability of a State Fire Marshal"; "The Advantages of Auto Fire Apparatus Over Horse-Drawn Apparatus for Fire Purposes." Officers were elected as follows: President, Hugo R. Delfs, Lansing; first vice-president, Thomas Scott, Manistee; second vice-president, Charles Crampton, of Bay City; third vice-president, Harry McCarty, of Fremont; statistician, Samuel Robinson, of Charlotte; chaplain, Rev. John Staley, of Manistee; secretary, A. P. Lane, Ithaca. The next convention will be held in Manistee.

North Dakota Firemen's Association.

The meeting of the firemen at Bismarck, June 8, was very successful. The next meeting will be held at Wahpeton. The following officers were elected by the volunteer firemen of the State to serve for the next year: Thomas Gilbertson, Lisbon, president; C. O. Russell, first vice-president, Devil's Lake; A. A. Lee, second vice-president, Hatton; H. L. Read, secretary, Bismarck; Roy N. Sappenfield, treasurer, Jamestown; B. R. Taylor, Jr., statistical secretary, Mandan. Trustees: John T. Charmley, Kenmare; Michael Tiwschida, Glenullin; George Stanley, Casselton, International delegate, J. A. Mahood, Cando.

Oklahoma State Firemen's Association.—The convention was held at Tulsa June 6-9. The following officers were elected: Charles Slemm, of Anadarko, president; C. C. Nett, of Hobart, vice-president; James Chambers, of Claremore, second vice-president; M. D. Kress, of Fairview, third vice-president; Walt Brown, of Purcell, treasurer; J. Bart Foster, of Chandler, secretary, and Chief John L. Templeton, of Muskogee, delegate to the national convention. Enid gets the next State convention.

Virginia State Firemen's Association.—The following topics will be discussed at the convention, Alexandria,

Over Insurance—Should there not be a closer community of interest between local underwriters and the fire department officials? Assigned to R. H. McLaughlin, Chief Fire Department, Norfolk, Va.

The importance for cities and towns of our State to create an office as fire inspector of buildings, co-operating with the chief of the fire departments, would it not reduce financial loss by fire and danger to life and property. Assigned to W. R. Walker, Chief Fire Department, Portsmouth, Va.

The importance of railroads and steamboat companies and local business places of our State adopting strict rules preventing the storage of coal oils, benzine, kerosene, powder, etc., with other fires and loss of life to our brave firemen and others. Assigned to John H. Roffo, Assistant Chief Fire Department, Richmond, Va.

An efficient volunteer fire department and how to maintain it. Assigned to M. C. Smith, Chief Citizens' Fire Department, Pocahontas, Va.

The firemen of our State when having saved human lives and property at the risk of losing their own life, how should firemen be best rewarded. Assigned to J. W. Waggoner, Captain Fire Department, Roanoke, Va.

Fire drills in our public schools, an important necessity, should it not be a part of the instructions or laws of the school boards that the children may be trained to have presence of mind in case of fire or in time of danger and the importance of having all doors swing both ways in buildings. Assigned to John H. Trimmer, President Relief H. L. Co., No. 1, Fire Department, Alexandria, Va.

National Playground Association.

The annual convention was held in Rochester, N. Y., June 7-11, when officers and directors were elected as follows: President, Joseph Lee, Boston; first vice-president, Harold F. McCormick, Chicago; second vice-president, Mrs. Lovell White, San Francisco; third vice-president, Robert Garrett, Baltimore; treasurer, Gustavus T. Kirby, New York City; secretary, N. S. Braucher, New York City. Among the directors are: Jane Addams, of Chicago; Dr. J. H. McCurdy, of Springfield, Mass.; George A. Parker, of Hartford, and Charles W. Eliot, of Cambridge, Mass. The following programme was carried out:

Tuesday Evening: First general session, 8 p. m., Convention Hall. Chorus of 500 children. Folk dance. Address of welcome, Hon. H. H. Edgerton, Mayor of Rochester. A representative from the Rochester Chamber of Commerce, "Constructive Philanthropy," Luther Halsey Gulick, M. D., president of the Playground Association of America, New York City. "What the Social Worker Needs to Know about Recreation," Richard Cabot, M. D., Massachusetts General Hospital, Boston, Mass. "Some Uses of the Public Schoolhouse," Elmer Ellsworth Brown, Ph. D., United States Commissioner of Education, Washington, D. C. Stereopticon views of playgrounds for those who cared to remain.

Wednesday Morning: Second general session, 9.30-10.30 a. m., Hotel Seneca. Report of the Committee on Play in Institutions, Alexander Johnson, secretary of the National Conference of Charities and Corrections, Fort Wayne, Ind., chairman. Report of the Committee on Storytelling, Annie Carroll Moore, supervisor of children's room, New York Public Library, New York City, chairman. Report of the Committee on Equipment, E. B. DeGroot, general director of the South Park Commission, Chicago, Ill., chairman. Sectional meetings, 10.30-11.30 a. m., Hotel Seneca. Discussion of report of the Committee on Play in Institutions. Discussion of report of the Committee on Storytelling. Discussion of report of the Committee on Equipment. Third general session, 11.30 a. m.-12.30 p. m., Hotel Seneca. Discussion of report of the Committee on A Normal Course in Play, Clark W. Hetherington, professor of physical education, University of Missouri, Columbia, Mo., chairman. Luncheon, 1.00 p. m., followed by five-minute speeches. "Women's Clubs," Mrs. Edwin F. Moulton, chairman of the Civic Committee of the General Federation of Women's Clubs, Warren, O. "Young Men's Christian Associations," George J. Fisher, M. D., secretary of the Physical Department of the International Committee of Young Men's Christian Associations, New York City. "Neighborhood Workers," Mary E. McDowell, University Settlement, Chicago, Ill.

Wednesday Afternoon: Automobile tour, 2.30 p. m. From Seneca Hotel, Main street, to Plymouth avenue; to Clarissa street bridge; to Mount Hope avenue; through Ellwanger and Barry Nursery; to Highland Park, where each delegate will be presented with flowers from the Flower Committee; to Goodman street, to East avenue; to University avenue, passing the University of Rochester and East High School; to St. Paul street; to Seneca Park. 3.30 p. m.: Exhibition of water sports, Seneca Park. Automobiles will leave

Seneca Park at 5 o'clock, returning to Hotel Seneca by way of Lake avenue, passing Brown's Square Playground en route. 6.30 p. m.: Special dinner parties, for representatives of women's clubs, Young Men's Christian Association, Young Women's Christian Associations, Associated Charities, probation officers, neighborhood workers, park commissioners, educators.

Wednesday Evening: Fourth general session, 8 p. m., Convention Hall. Chorus of 500 children. Folk dance. "Exploitation of Child Life," Stephen S. Wise, Ph. D., Rabbi of the Free Synagogue, New York City. "The Message of the Indian and the Outdoor Life," Ernest Thompson Seton, New York City. "Why Wholesome Shows Pay," Frederick Thompson, designer and builder of Luna Park, Coney Island, and the Hippodrome, New York City. Stereopticon views of playgrounds.

Thursday Morning: Fifth general session, 9.30-10.30 a. m., Hotel Seneca. Report of Committee on Activities for Girls, Beulah Kennard, president of the Pittsburgh Playground Association, Pittsburgh, Pa., chairman. Report of Committee on the Organization and Administration of a Playground, George W. Ehler, secretary of the Public Athletic League of Baltimore, Baltimore, Md., chairman. Report of Committee on Recreation Buildings for Large and Small Communities, Bessie D. Stoddard, secretary of the Department of Playgrounds, Los Angeles, Cal., chairman. Sectional meetings, 10.30-11.30 a. m., Hotel Seneca. Discussion of report of the Committee on Activities for Girls. Discussion of report of the Committee on the Organization and Administration of a Playground. Discussion of report of the Committee on Recreation Buildings for Large and Small Communities. Discussion of report of the Committee on A Normal Course in Play. Sixth general session, 11.30 a. m., Hotel Seneca. "The Possibility of Relieving the Monotony of Factory Work," Rose Pastor Stokes, New York City. Luncheon, 1 p. m. Followed by five-minute speeches on "The Church and Recreation."

Thursday Afternoon: 2.30 p. m., programme to be announced later by the Rochester Park Board.

Thursday Evening: Seventh general session, 8 p. m., University of Rochester Gymnasium. "The Dance Problem," Mrs. Charles Henry Isaacs, chairman of the Committee on Amusements and Vacation Resources of Working Girls, New York City. "Family Recreation," Joseph Lee, vice-president of the Playground Association of America, Boston, Mass. "Recreation and the Higher Life," George William Knox, D.D., LL.D., Union Theological Seminary, New York City. Reception, 9.30 p. m., University of Rochester Campus. The campus will be decorated and illuminated for the occasion.

Friday Morning: Eighth general session, 9.30-10.30 a. m., Hotel Seneca. Report of Committee on Festivals, E. S. Martin, director of Public Recreation and Social Education, Columbus, O., chairman. Report of Committee on Athletics for Boys, James H. McCurdy, M.D., director of Physical Training of the International Y. M. C. A. Training School, Springfield, Mass., chairman. Report of Committee on Playgrounds in Relation to Social Centers, Graham Romeyn Taylor, secretary of the the Playground Association of Chicago, Chicago, Ill., chairman. Sectional meetings, 10.30-11.30 a. m., Hotel Seneca. Discussion of report of the Committee on Festivals. Discussion of report of the Committee on Athletics for Boys. Discussion of report of the Committee on Playgrounds in Relation to Social Centers. Ninth general session, 11.30 a. m., Hotel Seneca. "Moving Pictures," Their Function and Proper Regulation, John Collier, National Board of Censorship of Motion Pictures, New York City. Luncheon, 1 p. m.

Friday Afternoon: Trip to Maplewood Park, 2.30 p. m. Delegates will take chartered cars for Maplewood Park, where the Musical Festival will be held. Musical Festival, 3 p. m., Genesee Valley Park.

Friday Evening: Banquet, 7 p. m. "Municipal Recreation: Possibilities and Limitations from the Point of View of a Park Commissioner" (speaker to be announced later). "Parks as Recreational Centers," George A. Parker, Superintendent of Parks, Hartford, Conn. Irish Storytelling, Seumas McManus, Donegal, Ireland.

Saturday Morning: Recreation. Various forms of recreation will be open to delegates.

Saturday Afternoon: Play Festival, Genesee Valley Park. Ten thousand Rochester school children will take part.

Saturday Evening: Picnic supper, Genesee Valley Park. This supper has been arranged for delegates and members of the Rochester Local Committee. Water Carnival, Genesee Valley Park.

Calendar of Meetings

- June 21-24. American Society of Civil Engineers.—Annual Convention, Chicago, Ill.—Charles Warren Hunt, Secretary, 220 W. 57th st., New York City.
- June 22. New England Water Works Association.—June Outing, Providence, R. I.—Willard Kent, Secretary, Narragansett Pier, R. I.
- June 21-23. Indiana Municipal League.—Annual Convention, Richmond.—Baltz A. Bescher, Secretary, Richmond, Ind.
- June 22-24. American Institute of Chemical Engineers.—Semi-annual Meeting, Niagara Falls, N. Y.—J. C. Olsen, Secretary, Polytechnic Institute, Brooklyn, N. Y.
- June 23-25. Society for the Promotion of Engineering Education.—Annual Meeting, Madison, Wis.—Henry H. Norris, Secretary, Cornell University, Ithaca, N. Y.
- June 27-30. American Institute of Electrical Engineers.—Annual Convention, Jefferson, N. H.—R. W. Pope, Secretary, 33 West 39th st., New York City.
- June 28-July 2. American Society for Testing Materials.—Annual Meeting, Atlantic City, N. J.—Edgar Marking, Secretary, University of Pennsylvania, Philadelphia, Pa.
- June 30-July 1. American Society of Heating and Ventilating Engineers.—Semi-annual Meeting, St. Louis, Mo.—W. M. Mackay, Secretary, P. O. Box 1818, New York, N. Y.
- June 30-July 1. Boards of Health of Ohio.—Eleventh Annual Conference, Cleveland, O.—Dr. C. O. Probst, Secretary State Board of Health, Columbus, O.
- July 2-28. Ohio Electric Light Association.—Annual Convention, Cedar Point, Ohio.—D. L. Gaskill, Secretary, Greenville, Ohio.
- July 26-27. Western New York Volunteer Firemen's Association.—Tenth Annual Convention, Lockport, N. Y.—Charles F. Foley, Secretary, Lockport, N. Y.
- August 17-20. National Firemen's Association.—Thirteenth Annual Convention, Rochester, N. Y.—Bert Fisher, Secretary, 3812 Wabash ave., Chicago, Ill.
- August 23-26. League of American Municipalities.—Annual Convention, St. Paul, Minn.—John MacVicar, Secretary, City Hall, Des Moines, Ia.
- August 23-26. International Association of Fire Engineers.—Annual Convention, Syracuse, N. Y.—James McFall, Secretary, Roanoke, Va.
- September 6-9. International Association of Municipal Electricians.—Fifteenth Annual Convention, Convention Hall, Rochester, N. Y.—Frank P. Foster, Secretary, Corning, N. Y.
- September 21-23. New England Water Works Association.—Annual Meeting, Rochester, N. Y.—Willard Kent, Secretary, Narragansett Pier, R. I.
- October 10-14. American Street and Interurban Railway Association.—Annual Convention, Niagara Falls, Ontario.—H. C. Donecker, Secretary, 29 West 39th st., New York, N. Y.
- October 11-16. American Society of Municipal Improvements.—Seventeenth Annual Convention, Erie, Pa.—A. Prescott Folwell, Secretary, 239 W. 39th St., New York, N. Y.
- November 14-18. National Municipal League.—Annual Meeting, Buffalo, N. Y.—Clinton Rogers Woodruff, Secretary, North American Building, Philadelphia, Pa.

PERSONALS

ALLEN, EDWIN R., Town Clerk of Hopkinton, R. I., has been reelected for his 44th consecutive term by a unanimous vote of his townfolk.

ANDERSEN, N. P., City Surveyor of Brigham City, Utah, was drowned in the Logan River recently, while returning from a surveying expedition in Logan Canyon.

DAVIS, W. MAHLON, Berlin, Ont., Can., has been appointed City Engineer of Prince Rupert, British Columbia.

DOUGHTY, GEORGE W., Greeneville, Tenn., has been elected Mayor over W. H. Armitage.

DOUGLAS, W. J., Engineer of Bridges of the District of Columbia, has resigned in order to associate himself with William Barclay Parsons, of New York City, Engineer in charge of the construction of the New York subways. Mr. Douglas entered the service of the District as assistant engineer August 15, 1898, and was promoted to Engineer of Bridges, May 1, 1901, and has supervised the construction of the Connecticut avenue and Anacostia bridges and a number of other smaller structures in Rock Creek Park.

EMERSON, GUY C., former Superintendent of Streets of Boston, Mass., has declined the position of Consulting Engineer to the department recently offered by the Mayor, on the ground that there is no need for the service of a consulting engineer; Mr. Emerson is still considering an offer as advisory engineer to the Boston Finance Commission.

HIGH, S. V., has been appointed Superintendent of the Water Department of Kansas City, Mo., a position he held before the appointment of W. G. Goodwin, the retiring Superintendent.

JACKSON, WILLIAM, City Engineer of Boston, Mass., has been appointed by Mayor Fitzgerald as a member of the Schoolhouse Commission.

FROMM, C. F. P., Council Bluffs, Ia., a newspaper man, has been appointed Chief of Police by Mayor Maloney, succeeding Maj. George H. Richmond, removed.

LAFAYETTE, B. F., Chicotah, Okla., was elected Mayor when the city became a first-class city; Ben Huddleston, City Clerk; E. H. Wadfall, Treasurer; I. S. Vaughn, City Attorney; Tom Stout, Chief of Police; Ben Gross, Police Judge; C. F. Snelson, Assessor, and Charles Oman, Street Commissioner.

McKAY, D. B., editor of the Tampa "Times," has been elected Mayor of Tampa, Fla., over S. Elliott, and Herman H. Regener and A. M. Windhorst, Councilmen-at-Large, and they have assumed office.

McPHERSON, A. L., of the Saskatchewan Provincial Public Works Department, and for some time past Consulting Engineer to the city of Regina, Saskatchewan, has been appointed by the City Council one of the new Municipal Commissioners.

MOIFS, CHARLES P., the first Mayor of Central Falls, R. I., dropped dead last week. He was a past Commander of the Rhode Island Department, G. A. R.

SCOTT, Dr. S. M., Sr., Mayor of Terra Alta, W. Va., has resigned on account of his announced unwillingness to associate with members of the City Council.

WEIRICK, RAY E., has been appointed Landscape Engineer in the Department of Parks and Public Buildings, Des Moines, Ia.

WESTINGHOUSE, HENRY H., a brother of George Westinghouse, has been elected president of Westinghouse, Church, Kerr & Co., New York, succeeding the late Walter C. Kerr.

WHINERY, SAMUEL, Consulting Engineer, New York, N. Y., has been retained by the Commission on City Expenditures of Chicago, Ill., to report upon the present conditions and possible improvements in the Street Department.

WHITE, A. L., President of the Park Board of Spokane, Wash., has been re-elected; also Frank P. Hogan, Vice-President, and H. J. Gibbon, Secretary.

WIGHTMAN, LUCIUS I., New York, N. Y., for the past six years advertising manager for the Ingersoll-Rand Company, will open an office in New York City as an independent specialist in machinery advertising.

TRADE NOTES

Cast-Iron Pipe.—Chicago: The small towns and cities show more activity in buying than large ones. There is a good run of orders. Quotations: 4-inch, \$28.50; 6 to 12-inch, \$27.50; 16-inch and up, \$26.50. Birmingham: Market is active in small lots. Quotations: 4 to 6-inch, \$23; 8 to 12-inch, \$22; over 12-inch, \$21. San Francisco: Business is quite active in both large and small orders.

Lead.—New York: While the price of lead remains unchanged, the market is not as strong in tone as it was, as consumers seem to have supplied their wants for the time being. Contractors who were supporting the market by making good purchases for conduit work have apparently taken all they need, while the general manufacturing trade is buying but little. The outside interests continue to control the market prices, which are 4.37½c., New York, and 4.22½c., St. Louis.

Miracle Pressed Stone.—The business of the Miracle Pressed Stone Co., Minneapolis, Minn., has been sold to the Marsh Co., 970 Old Colony Building, Chicago, Ill. The entire manufacturing and selling interests will hereafter be handled by the Marsh Co. The former owners of the Miracle Co. have contracting interests in the Middle West to which from this time on they will give their entire attention.

Drag-Line Excavators.—The Bucyrus Company, South Milwaukee, Wis., has acquired the exclusive rights to make and sell the Heyworth Newman drag-line excavators, from James O. Heyworth, of Chicago. This apparatus is now in use on the North Shore drainage canal of the Chicago Sanitary District, the New York barge canal, the Cape Cod ship canal, and other works. The Heyworth bucket has a rigid bail which can be adjusted so it will dig, rather than scrape. The material and its shape have been selected to enable the bucket to clear itself even when very sticky material is handled.

Jacks.—Joyce, Cridland Co., Dayton, O., has issued a 100-page catalogue describing its complete line of jacks. The firm is now putting on the market a number of new styles of jacks. In the automatic jack it is only necessary to work the lever handle up and down to either raise or lower the load. The automatic geared jacks also operate on the same principle and are as powerful as the hydraulic type. The hydraulic jacks contain many improvements; for instance, they are provided with a speeding device, allowing the jack to be quickly run up to load, where the speeding device automatically cuts out, leaving only the power pump in service.

Portland Cement.—The machine shop facilities of the Atlas Portland Cement Company at Northampton, Pa., will be reinforced by equipment from the repair plant at Iasco, Mo., which has been discontinued in consequence of a machinists' strike.

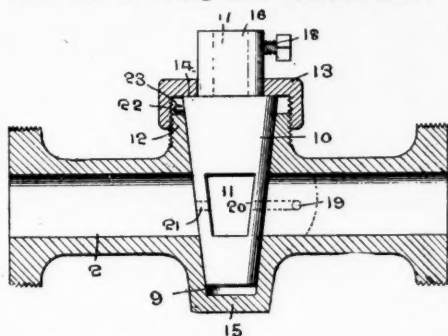
Pumping Engine.—The pumping engine built by the Laidlaw-Dunn-Gordon Company for the Flint, Mich., water works and sold through its Detroit office, is now being installed. It will have a capacity, for each twenty-four hours' service, of 7,000,000 gallons.

Motor Pump.—An eight-inch motor driven centrifugal pump will be installed by the Tomkins Cove Stone Company, Tomkins Cove, N. Y.

PATENT CLAIMS

959,092. ATTACHMENT FOR HYDRANTS. Winfred Hugh Wileman, Woodruff, Kan. Serial No. 457,496.

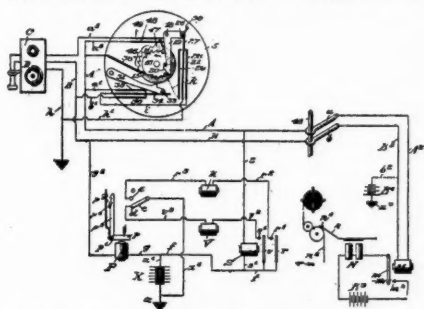
A device of the character described, comprising a tubular body having a transverse socket extending to a point below its bore and above said bore, a tapered plug received by said socket, means for the retention of said plug in operative position in said socket, said body having a venting port extending horizontally through one side thereof and at an acute angle to the axis of said body, said port having its outer end delivering in a direction about



parallel with the length of said body, and said plug having a way through it of substantially the same cross-sectional area as the bore of said body, said plug also having ports, one opening laterally there-through and communicating with said bore and said way, and the other port also being adapted to communicate with said bore and to register with said venting port as said plug is turned to cut off communication between its way and the bore of the body.

958,719. SIGNAL-BOX FOR FIRE-ALARM SYSTEMS. Frederick S. Bronson, Rochester, N. Y., assignor to Denio General Electric Company, Rochester, N. Y., a corporation of New York. Serial No. 532,807.

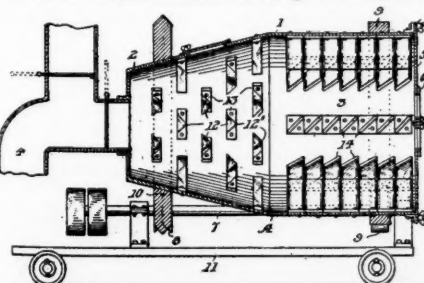
In a signal mechanism for use on subscribers' circuits of automatic telephone exchange systems which comprise electromagnetically operated central office switches, the combination with two movable members and a set of contacts ar-



ranged in a subscriber's circuit and operated by one of the members to transmit current impulses for actuating the central office switches, to select a predetermined circuit, of other contacts co-operating with the other member for transmitting alarm impulses over said circuit after the connection has been established through said switches and means for driving the members.

960,410. BITUMINOUS MIXING MACHINE. Joseph H. Ryan, Pittsburg, Pa. Serial No. 507,525.

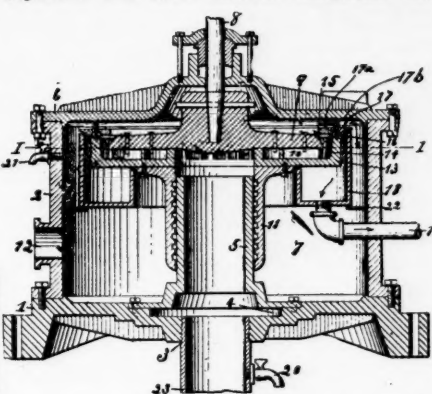
A drum adapted for rotation in opposite directions; a discharge opening at one end of said drum; means moving the mixture



always toward the discharge opening; and means moving the mixture in opposite directions toward or from the discharge opening as the motion of the drum is reversed.

958,769. PROCESS OR METHOD OF PURIFYING OR CLARIFYING WATER. William K. Richardson, Leavenworth, Kan. Serial No. 455,590.

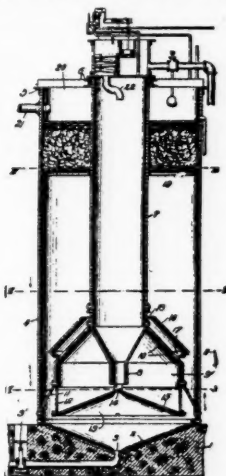
The process or method of purifying or clarifying water, which consists in subjecting water in the presence of air under pressure, to rotary velocity sufficient to separate the solid matter contained in,



and held in suspension in the water, and discharging by pneumatic pressure the solid matter with a portion of the water, and discharging the pure water separately, both being delivered from said apparatus substantially as described.

958,832. WATER-SOFTENING APPARATUS. Hezekiah Russell, Dayton, Ohio. Serial No. 488,441.

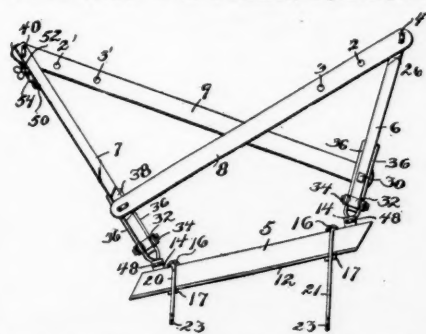
In a water-softening apparatus, a tank; a perforated, cone shaped baffle plate located in the bottom of said tank with its lower edge set in from the tank sides; a



downtake pipe in said tank, having a discharge port located over the apex of said baffle plate, and means for delivering liquid to said pipe.

958,891. ROAD GRADER AND SCRAPER. Frank L. Reising, Piper City, Ill. Serial No. 526,376.

In combination, a knife bar, an upper and lower ear secured to each end of said bar, a long and a short arcuate drag arm extending from said knife bar, a long and a short runner, an eye secured to the lower forward corner of each runner, a pinch yoke



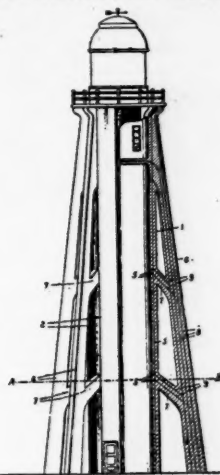
secured to the upper forward corner of each runner, a clamping bolt passing through each runner and connected yoke, a forked securing member having a terminal bolt eye, the tines of said member being adjustably held below said yoke, two bars adjustably secured crosswise to said runners, and bolts passing through said ears and eyes.

960,760. DOMESTIC GARBAGE - FURNACE. Alfred V. Wood, Brunswick, Ga. Serial No. 523,830.

In a domestic garbage furnace, a casing the lower end of which is closed and bulge downwardly so as to provide an ash-pit, a grate having trunnions journaled in the casing and located directly above the ash-pit, a top consisting of a pair of hingedly united sections arranged on the upper end of said casing, a supporting hook depending from the intermediate portion of one side of one of said top sections, and a receptacle of considerably less diameter and length than the diameter and length of the casing supported by said hook.

960,666. REINFORCED CONCRETE TOWER. Louis F. H. de Miffonis, Aylmer, Quebec, Canada. Serial No. 465,896.

A concrete tower or the like, comprising a wall having a prismatic outer periphery, a plurality of reinforcing rings embedded in said wall and extending into each of the corners formed by the meeting exterior



prismatic faces of said wall, vertical reinforcing counter-forts extending from the corners of the outer side of said wall, reinforcing bars embedded in said counter-forts, braces joining said counter-forts to the outer corners of said wall at intervals throughout the entire height thereof and reinforcing bars embedded in said braces and connected to the reinforcing bars in said counter-forts and the reinforcing rings in said wall.

960,807. STREET-LAMP SOCKET. Clifton L. Bundy and Albert H. Manwaring, Philadelphia, Pa., assignors to Philadelphia Electrical & Manufacturing Co., Philadelphia, Pa., a corporation of Pennsylvania. Serial No. 513,030.

A lamp socket having a base member provided with an internal shell, terminal contacts carried by said base member, one of which is movable, a socket member having an external shell arranged to be entered into the shell of the base member, said socket having a contact for engagement with the movable contact whereby the latter may be pushed out of the way, and a lamp receiving shell or terminal in the socket member.

INCORPORATIONS

Davis Construction Company, Incorporated, of Fairfax, Va.; capital, \$50,000. Incorporators: Harold Davis, president; John L. Newbold, vice-president; F. B. Johnson, secretary and treasurer, all of Washington.

Eagle Paving Co., Syracuse, N. Y.; capital, \$10,000. Incorporators: Michael Colosurdo, Joseph Colosurdo and Isador Rubinstein.

Kent Water, Light & Power Company, Philadelphia; capital, \$25,000.

The Marion Dump Wagon Company, Marion, Ohio; capital \$10,000. Incorporators: Herbert S. Long, Jay Smiley, George B. Christian, Charles C. Fisher and William T. Jones.

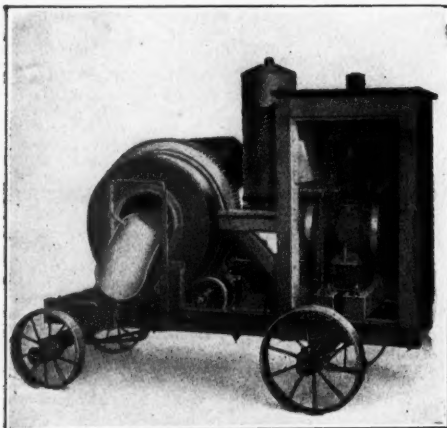
United Light and Railways Co., Grand Rapids, Mich.; to acquire the following properties: Fort Dodge, Iowa, Light Company; Muscatine, Iowa, Light and Traction Company; Cadillac, Mich., Gas Light Company; La Porte, Ind., Gas Light Company; Mattoon, Ill., Gas Light Company; Chattanooga, Tenn., Gas Company; Cedar Rapids, Iowa, Gas Light Company, and La Porte, Ind., Electric Company; capital, \$30,000,000.

The Watertown Steel Tank & Metal Culvert Company, Watertown, S. D.; capital, \$25,000. Incorporators: A. E. Hathaway, A. A. Ackerman and others.

MUNICIPAL APPLIANCES

Chicago Concrete Mixer

THE illustration shows the Chicago Mixer, made by the Chicago Concrete Machinery Company, 293 Dearborn



MIXER FOR CEMENT SIDEWALK CONTRACTORS

street, Chicago, Ill. It is mounted on a truck with gasoline engine, and is built especially for the use of contractors who specialize in cement sidewalks, foundations, concrete building blocks, etc. The machine is of the cylindrical, batch, non-tilting type.

Internal Combustion Engines

THE following report has been received from the Sneed & Co. Iron Works, Jersey City, N. J., in regard to the cost of power at their works for three months, ending March 31, 1910. The plant consists of one 17 x 27½ "De La Vergne" type "F. H." twin oil engine, rated capacity 170 brake horsepower, direct connected to 115-kilowatt, 500-volt, direct current generator; the electric current generated is utilized to drive the various electric motors in the factory and in lighting the plant when necessary:

Plant operated 79 days of 10 hours each.
KWH. developed at switchboard... 41,670
Brake HP. (by calculation)... 62,042
Possible brake HP. at full load for 790 hours... 134,300
Possible KWH. as above (by calculation)... 90,169
Load factor (790 hours)... 46.213%

Actual Cost of Power

	Total.	Per KWH.	Per HPH.
Fuel oil, 32,649 lbs. = 4442 gals. at 2½c.....	\$ 99.96	\$.00240	\$.00160
Lubrication (205 gals. misc. oils at 23.4c. per gal.).....	47.96	.00115	.00077
Waste and miscellaneous supplies.....	14.88	.00035	.00024
Labor, one man \$1.50 per day and extras.....	151.37	.00363	.00244
Repair fund (estimated).....	76.70	.00184	.00124

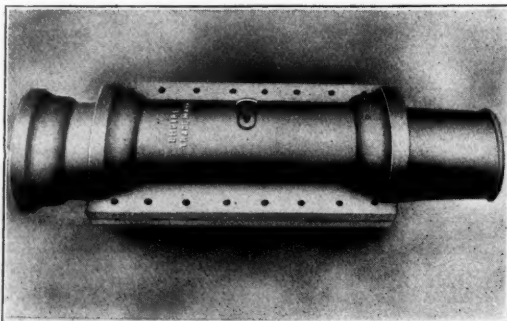
Total, 41,670 KWH.

Fuel oil employed 28.8° gravity = 7.35 lbs. per gal.
Lbs. fuel oil per BHPH. = 0.526

Lbs. fuel oil per KWH. = 0.783

Hatch Box for Water Mains

THE illustration shows the Empire Hatch Box as it appears ready for installation. The enlarged diameter at the middle insures the easy introduction of a cleaning device into the main. A tight joint about the cover is secured by the use of lead and yarn, as is the practice in the bell and spigot joint of cast-iron pipe. The boxes are made regularly in sizes from 4 to 12 inch by the National Water Main Cleaning Company, 61 Park Row, New York.



EMPIRE HATCH BOX

Unbreakable Water Gauge Glasses

THE frequent breaking of the common gauge glass is a source of not only annoyance, but at times of great danger to the engineer or boiler attendant. This trouble is avoided in "Firma" gauge glass by drawing two glass tubes, of different degrees of expansibility, one over the other. The whole is then fused into a solid tube. This construction gives the highest resistance to the sudden changes of temperature and the solvent action of hot water. The glass inside the tube expands in proportion to the temperature of the steam or hot water, and the outside tubing contracts according to the temperature of the cold air. These glasses are unbreakable from natural causes. They are not affected by a drop of water, a flake of snow, or a sudden draft of cold air coming in contact with the glass while it is hot. The resistance offered by this glass to sudden changes of temperature is so great that a glass may be heated to 350° temperature, Fah., and will not break when dropped vertically into cold water. A report of the Imperial Physical and Technical Institute, Charlottenburg, Germany, concludes as follows: "It can be taken as a general rule, from experiments made, that water gauge glasses made of 'Firma' glass remain, as far as can be seen, unaffected during use on boilers when wetted by rain drops or snow flakes, even when they have been previously scratched." During a test of the resistance to sudden changes of temperature which was made with a boiler by sprinkling the glasses, which were under hot steam pressure, with cold water, the values given below were arrived at under exactly similar conditions. These values give the steam pressure in pounds which the several glasses, on an average, resisted during a series of tests.

Pressure borne under sprinkling with cold water:

French Glass	English Glass	"Firma" Glass
75 lbs.	90 lbs.	410 lbs.

The temperature of steam at 410 lbs. gauge pressure is about 460° Fah.

These glasses are made by the Advance Packing and Supply Company, 123 Franklin street, Chicago, Ill.

Instrument for Measuring Piston Travel

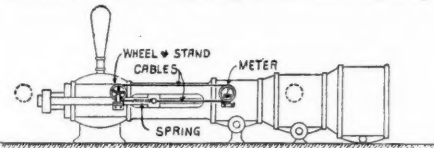
THE Duenkel Mico Reciprocating Meter is an instrument for measuring the total distance traveled by pistons expressed in units or linear feet. On duplex and single pumps it replaces the usual form of stroke counters, which only indicate reversals irrespec-



DIAL OF RECIPROCATING METER

tive of the length of stroke. Thus it may be used to register gallons of water pumped or cubic feet of gas or compressed air. It can be used on all diameters, and strokes up to 48 inches in length and special drums may be installed for registering longer drives, as the distance traveled by an elevator.

The diagram shows a meter for positive motion drive as applied to a pump whose stroke does not exceed 48 inches. A ½-inch flexible bronze cable is fastened to a drum on the meter, passes around a small stationary wheel, and is hooked to a spring, which in turn is attached to the pump cross-head. The function of the spring is to take up any



APPLICATION OF METER TO PUMP

slack in the cable, and its expansion and contraction do not affect the distance traveled by the cross-head and registered on the dial. Another cable leads from the cross-head to the drum, so that while the first cable winds on the other unwinds. The dotted circles in the diagram indicate other possible positions of both the meter and the stationary wheel. If it is desired to locate the meter at a point distant from the machine, guide pulleys for the cable may be located at these points. The above described meter is termed a positive return meter, but another type, known as the spring return, works on the same principle as a steam engine indicator, with a single cable from the drum to the cross-head. The meter set includes the attachment for converting the meter into the spring return drive type. Any number of strokes or even the smallest fraction of a stroke are added and recorded. The hand always rotates in a clockwise direction and one revolution represents 10 feet of piston travel. The dial is graduated in divisions, each of which represents .05 feet. The lower row of eight figures gives the total linear feet traveled and repeats at 100,000,000. The meter is portable and very compact, hence suitable for general testing purposes. This instrument is made by the Mechanical Instrument Co., 120 Liberty street, New York.

New Auto Fire Engine

A NEW auto fire engine has been placed on the market by the Luitwieler Pumping Engine Company, 123 Ames street, Rochester, N. Y. It was recently inspected and tested by Commissioner of Public Safety Charles S. Owen, Rochester, Fire Chief Charles Little and a number of the officials of the department. The machine has a speed of thirty miles per hour on high gear, with a medium and low speed also. The pump delivers 880 gallons of water per minute.

Among the incidentals of design will be found large and stout road wheels 4 by 36 inches, with artillery hubs, 12 spokes, wide felloes, solid tires and tread of 58 inches front and rear. The rear wheels are equipped with large diameter brake drums, which are enclosed, hence mud proof; the drive is by means of sprocket chains, and they are housed in so that they are out of harm's way and will last for a long time. The chassis frame has four channel section longitudinal members suitably cross connected, and the wheel-base being relatively long, 130 inches, permits of the use of a long and wide running board on each side. At the rear there is a footboard which affords standing room for a part of the crew, and chemical equipment is strapped to the iron work, this being composed of one extinguisher on either side, but so placed as not to occupy space which can be used as standing room. The hand rails are in a position of advantage and are sufficiently strong to induce the proper measure of safety.

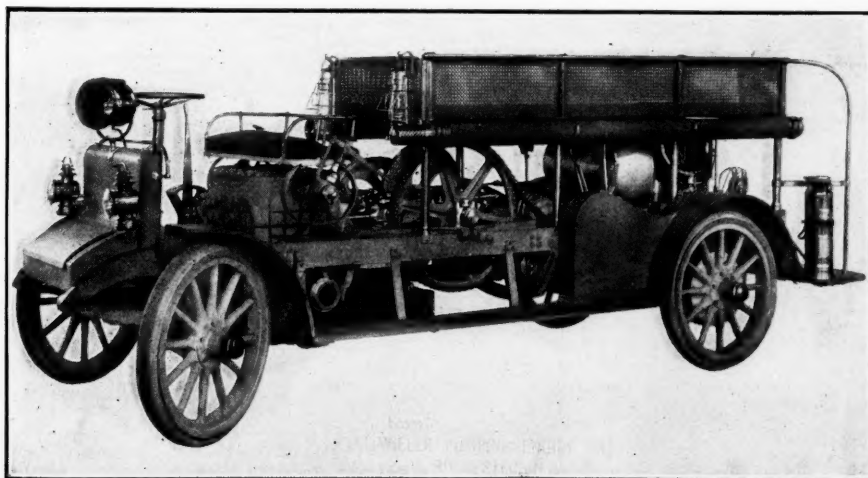
The hose bed, which carries 1,000 feet of fire hose, has a suction hose strapped to either side, with supporting hooks fastened to the stanchions. Nozzles and other fire-fighting appurtenances are carried on supports just back of the driver's seat, at the front of the hose bed. The four-cylinder motor, 6x6½ inches, which is especially designed in order that it will drive the pump, as well as provide power for the automobile, is located over the rear axle with the flywheel in front, and the transmission gear is so arranged that power is taken from it to the jackshaft, which extends across the chassis frame at a point about 30 inches in front of the center line of the rear axle. The jackshaft extends out so that the sprocket pinion which furnishes the connection in line with the sprockets on the rear wheels is get-at-able, but it is housed in for protection to the firemen who

stand on the running boards. The maximum power of the motor can be used to drive the pumps at various speeds, the pressure increasing as the quantity of water is diminished. When in operation the pump is non-pulsating and there is no jar or vibration. It is 6x12 inches, double acting, with a maximum speed of 100 revolutions per minute.

Referring to the illustration, it will be seen how a second sprocket chain connects with a large diameter sprocket wheel in front of the jackshaft, which large diameter sprocket wheel is pressed over the crankshaft of the hydraulic pump and an outboard bearing of the pillow block type is fastened to the outer chassis member on the left side to carry the load. The cylinders of the pump are just under the driver's seat, as shown in this view, and the connecting rods make up the distance between the crankshaft and the piston cross heads.

The gasoline tank is on the top of the chassis, back of the vertical line of the jackshaft, and in a position somewhat protected by the superstructure. The character of the workmanship throughout is in accord with the demands of this class of service, and the designer considered accessibility as one of the prime requirements. The driver's seat is well to the front of the machine, is in fitting relation with a vertical steering post of stout design, and the control is by means of side levers, which are also made unusually strong. The single searchlight is placed on the dash, within reach of the driver's hand, moving in the same radius as the wheels, and the balance of the lighting equipment is that required by law, i.e., the customary side and tail lights, using kerosene oil. The radiator is under the pump, the ground draft keeps the water cool without a fan and water can be circulated from the pump when working.

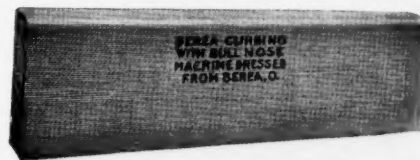
In the engine room the apparatus stands on an incline. When an alarm comes in the men mount the truck, the engineer pulls a hanging cord and it runs down the incline without cranking. The cord pulled by the engineer releases the door springs and the chocks under the rear wheels at the same instant. In the construction of this machine there is no piece that is used in any other car. The apparatus was designed by S. W. Luitwieler, president of the company, as well as five other pieces of fire-fighting apparatus that the company will build.



NEW LUITWIELER AUTO ENGINE WITH DUPLEX PUMP

Berea Curbing

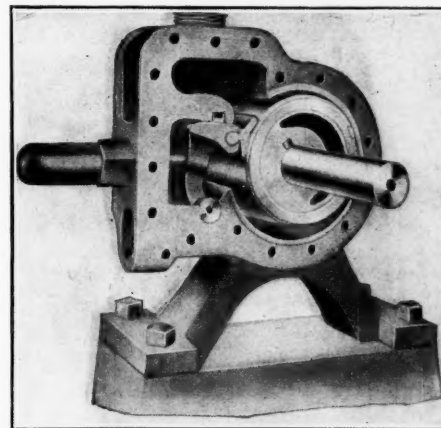
BEREA sandstone curbing derives its name from the town of Berea, where the quarries of the Cleveland Stone Company are located. Berea sandstone contains 96.90 per cent of silica and has a crushing strength of 10,000 pounds per cubic inch. The color is an attractive gray. The stone is worked easily;



hence its wide use. The Cleveland Stone Company ships from 300 to 400 miles of curbing a year to all cities. Formerly the curbing was shipped in the rough or dressed by hand. During the past three years the use of machine-dressed stone has constantly increased, and it is generally preferred to the hand-dressed curbing.

Positive Pressure Rotary Pump

ROTARY pumps with one inch or one and one-half inch discharge direct connected to electric motors or gasoline engines are made by the Kinney Manufacturing Company, 100 Boylston street, Boston, Mass. In the gasoline outfit



VALVELESS CENTRIFUGAL PUMP

the supply is carried in the base and the water cooling being supplied by a large open water jacket, which entirely surrounds the combustion chamber. No pump is used, the cooling being accomplished by the evaporation of water. The illustration shows standard type DS for 50-pound pressure or less, and type CH for pressures of 100 to 150 pounds. These pumps are identical in construction, except that type CH is compounded, thereby delivering one-half the volume with double the pressure with the same size engine. The new and original design of this pump makes the use of valves entirely unnecessary, and there are absolutely no valves used. All the bearings are of ample size and have hard bronze linings, which are readily renewable when they become worn, as all bearings will in time. Oiling is provided by compression grease cups, the only attention required being to keep these cups full of a good grade of hard grease. The pumps are provided with a U leather packing around the shaft inside of the bearings. These are readily renewed, when necessary, by removing the end nut and bearing lining.

THE WEEK'S CONTRACT NEWS

Relating to Municipal and Public Work—Street Improvements—Paving, Road Making, Cleaning and Sprinkling—Sewerage, Water Supply and Public Lighting—Fire Equipment and Supplies—Bridges and Street Railways—Sanitation, Garbage and Waste Disposal—Police, Parks and Miscellaneous—Proposals and Awards

To be of value this matter must be printed in the number immediately following its receipt, which makes it impossible for us to verify it all. Our sources of information are believed to be reliable, but we cannot guarantee the correctness of all items. Parties in charge of proposed work are requested to send us information concerning it as early as possible; also corrections of any errors discovered.

STREET IMPROVEMENTS

Jonesboro, Ark.—City will pave East Washington ave.

Auburn, Cal.—Placer County plans to start gradual improvements on road to Lake Tahoe.

Northside, Cal.—Residents of New York ave. are evolving a plan to widen street to uniform width of 40 ft.

Oakland, Cal.—Detail plans and specifications for asphalt paving of 8th st., from Cay st. to the Southern Pacific mole, have been submitted to Commissioner of Streets Walter C. Howe.

Oakland, Cal.—Bids will be asked for gyratory crusher for street department; \$500 has been appropriated for surfacing 8th st. bridge with macadam; plans have been adopted for improving four streets.

Pomona, Cal.—Bids have been rejected for proposed work on W. 3d st.; paving of E. 2d st. is being considered.

Santa Monica, Cal.—Residents of Topanago Canyon are urging widening of highway for distance of several miles.

Stockton, Cal.—San Joaquin Highway Commission will soon ask bids for improving four roads with asphaltic macadam.

Bridgeport, Conn.—Mayor E. T. Buckingham has recommended need of permanent paving.

New Britain, Conn.—Board of Public Works has decided to macadamize seven streets.

Pensacola, Fla.—Citizens have voted \$150,000 bonds for additional street paving.

Sorrento, Fla.—Citizens will appeal to County Commissioners to expend Sorrento section's share in certain work.

Waycross, Ga.—Ware County will vote August 23 on about \$140,000 bonds for road improvements.

Bicknell, Ind.—E. C. Williamson, Vincennes, will prepare plans for paving Main st.

Chicago, Ill.—Council is considering paving of Indiana ave. with creosote blocks.

Deland, Ill.—The East St. Louis Engineering Co., East St. Louis, is preparing plans and estimates for paving five-eighths of a mile.

East Moline, Ill.—Council has passed ordinance for laying 22,000 lin. ft. 5-ft. cement sidewalk.

Freeport, Ill.—Rockvale Township, Ogle County, has voted \$21,000 bonds to construct hard roads.

Moline, Ill.—Clark G. Anderson, City Civil Engineer, has estimated cost of widening 5th ave. between 11th and 15th sts., including court costs, at \$7,367.40.

Peoria Heights, Ill.—Village has appropriated \$1,000 for extending crushed gravel pavement to village limits.

Elkhart, Ind.—Paving of East High st., first north and south alley east of Main st. and intersecting alleys has been ordered by declaratory resolution of necessity adopted by Board of Works.

Michigan City, Ind.—Center, Scipio and New Durham townships have voted bonds for good roads.

New Albany, Ind.—Board of Public Works is considering improvement of W. Market st.

Newcastle, Ind.—City Engineer W. S. Friel is preparing plans for paving various streets.—W. S. Johnson, Clerk Board of Public Works.

Princeton, Ind.—County Commissioners have acted favorably on petitions for 16½ miles of improved roads in Gibson County; several miles are to be built this summer in city.

South Bend, Ind.—Board of Public Works is considering extension of George ave.

Vincennes, Ind.—Cost of improving Eberwine ave. has been estimated at \$9,288.06.

Cedar Rapids, Ia.—Council has passed a resolution to pave Grand ave. with brick block on concrete foundation.—L. J. Story, City Clerk.

Clinton, Ia.—Council has adopted ordinances for paving two streets with creosoted wood blocks, also for large amount of permanent sidewalks.—R. C. Hart, City Engineer.

Villisca, Ia.—Council will consider resolu-

tions July 6 for paving and curb construction.

Atchison, Kan.—Council has passed resolutions for brick pavements on Alley Block 2, 8th, Q, Riley and Hickory sts.—S. K. McCrary, City Engineer.

Hutchinson, Kan.—Council has passed ordinance for improving three streets and several alleys.

Leavenworth, Kan.—Council has passed resolution for 16 blocks of vit. brick paving.—Joseph O'Neill, City Engineer.

Leavenworth, Kan.—Leavenworth and Wyandotte County Commissioners are considering construction of 9 miles of rock road in said counties.—H. A. Perkins, County Engineer.

Wichita, Kan.—West Wichita Commercial League is securing \$2,000 fund to assist in building 10 miles of sand roads.—J. N. Covault, Secretary.

Lexington, Ky.—Council has rejected bids for reconstruction of Short st. with sheet asphalt; new bids will be asked.

Paducah, Ky.—Fiscal Court has decided to expend \$13,000 this year for improved roads.

Mansfield, La.—Council is considering paving of sidewalks.

New Orleans, La.—City is considering paving of Gayoso, Decatur and Peniston sts. with asphalt.—W. J. Hardee, City Engineer.

Pineville, La.—Citizens will vote on \$10,000 bonds for street and sidewalk improvements.—J. E. Walker, Mayor.

Ellicott City, Md.—Howard County Commissioners are considering construction of road from Columbia pike to New Cut road.

Detroit, Mich.—Council has directed Department of Public Works to advertise for proposals for paving Shepherd ave. with sheet asphalt, on concrete foundation, Medina, Ebera or other approved curbing; cost \$1,983; also for paving alley, 20 ft. wide, with vit. brick on concrete.—J. J. Haarer, Commissioner.

Escanaba, Mich.—Plans will be prepared for grading and paving Norris st.

Isnpeming, Mich.—Board of Public Works has recommended that macadam and concrete curbs and gutters be put in on portions of nine streets during present summer, at estimated cost of \$11,527.10.

Brainerd, Minn.—Council has decided to ask County Commissioners for \$1,500 appropriation to build better approaches on 6th st., 13th st. and Northeast Brainerd rd.

Hibbing, Minn.—Stunz Township Board is considering building of road, four miles long, to Sturgeon Lake district.

St. Hilaire, Minn.—Village Council has ordered the construction of cement sidewalks.

St. Paul, Minn.—Board of Public Works has decided to repave Dayton ave. with creosoted wood blocks; cost \$50,000.

St. Paul, Minn.—Park Board will expend \$50,000 this year for driveways and bridges in smaller parks of city.

Gulfport, Miss.—Harrison County Commissioners are considering \$50,000 bond issue for road improvements.

Chillicothe, Mo.—City Engineer has been ordered to prepare ordinances for the putting in of granitoid sidewalks on both sides of Cherry st.

University, Mo.—Consulting Engineer B. H. Colby, Security Bldg., St. Louis, Mo., is preparing plans for telford paving; cost about \$30,000.—E. G. Lewis, Mayor.

Great Falls, Mont.—City will pave ten blocks in business section with creosoted wood blocks.

Libby, Mont.—Council has passed ordinance for construction of 4½ miles of cement sidewalks.

Norfolk, Neb.—Citizens have voted \$12,000 paving bonds.

Audubon, N. J.—Council is considering \$20,000 bond issue for grading all streets and avenues.

Mount Holly, N. J.—New bids will be asked for building road from Indian Mills to Alsion, Burlington County.

Ocean City, N. J.—Cape May County Freeholders have instructed County Engineer Rise to survey new route and pre-

pare plans and specifications for Ocean City turnpike.

Sea Isle City, N. J.—Citizens will vote Aug. 16 on \$20,000 bonds for macadamizing two streets.

Albany, N. Y.—Mayor McEwan has signed ordinance for improvement of five streets.

Mt. Vernon, N. Y.—Grading and macadamizing three streets have been ordered; plans will be prepared by Engineers Rogers and Lattimer.

Mt. Vernon, N. Y.—Council is considering improvement of Cooley place.

Rochester, N. Y.—Council is considering following ordinances: Allen st. pavement, Frank st. widening, \$40,000; Brinker place improvement, Pinnacle rd. and Alliance ave. pavement; Raines Park pavement, \$10,000; Van st. pavement, Gardiner Park pavement, \$4,000; Dewey ave. sewer; Magee ave. walks, Nelis Park walks; Allen st. walks; Luckey st. walks, Seward st. walks; Dinger place pavement, \$4,000; Folsom place opening and extension; Elgin st. extension.

Schenectady, N. Y.—Council is considering paving of Hamburg st.; also adopted ordinance for grading, curbing and paving Bedford road.

Syracuse, N. Y.—Board of Contract and Supply has rejected bids for pavement of Lodi st., between James and Green sts.

Asheville, N. C.—Good Roads Association is considering construction of macadam road from Altapass to Black Mountain. Dr. C. P. Ambler is interested.

Southport, N. C.—Smithville Township is considering road improvements; cost about \$80,000.

Winston-Salem, N. C.—City will pave Summit st. from 6th to Boulevard.

Medford, N. D.—Bids will be received by M. L. Dryburgh for construction of 900 ft. or more of cement walk and curb.

Cincinnati, O.—Surveyor Cowen has estimated cost of resurfacing Springfield pike at \$6,900; oiling same \$600.

Ironton, O.—Paving of South 3d st. is being urged.

Lancaster, O.—Council is considering improvement of Main st. and sidewalks on two streets.

Mt. Gilead, O.—City will construct about 6,000 sq. yds. of brick paving.—W. B. Eels, Village Engineer.

Henryetta, Okla.—City will construct four miles of concrete sidewalks; bids asked.—C. O. Bussell, Street Commissioner.

Ashland, Ore.—Citizens will vote June 27, change of date, on \$55,000 bonds for paving and electric lights.

Klamath Falls, Ore.—Council is considering paving of five streets.

Oregon City, Ore.—Bids are wanted for improving streets, 29 blocks. Address City Recorder.

Portland, Ore.—City Engineer J. W. Morris has estimated cost of proposed hard surface pavements at \$250,000.

Salem, Ore.—City has rejected bids for paving 4th st. with gravel and macadam; new bids will be received.

Altoona, Pa.—Improvement of Bricktown rd. is being considered.

Bellevue, Pa.—Council has passed resolution for \$25,000 bond issue for improving Brighton and W. Bellevue roads.

Carnegie, Pa.—City has sold \$40,000 street improvement bonds.

Hatboro, Pa.—Council will borrow \$1,800 to complete street improvements.

Montrose, Pa.—Public ave. will be improved with crushed stone.

Philadelphia, Pa.—Council has voted to repave Allegheny ave. with asphalt.

Woonsocket, R. I.—Joint Standing Committee on Highways is considering \$25,388 appropriation for paving S. Main st. with granite blocks.

Lead, S. D.—Council is considering resolution for grading, macadamizing and curbing S. Siever st.

Mobridge, S. D.—Engineer D. Cuyler Washburn, Aberdeen, will prepare plans for bitulithic and concrete paving.

Erwin, Tenn.—Citizens will vote June 30 on \$20,000 bonds for street improvements and sewer construction.

Aransas Pass, Tex.—Citizens will vote on

\$15,000 bonds for street improvements.—W. H. Vernon, Mayor.

El Paso, Tex.—Council has adopted ordinance for paving East Missouri st.; paving of Mesa ave. is being considered.

Groesbeck, Tex.—Limestone County will vote July 9 on \$125,000 bonds for road improvements.

Marlin, Tex.—City has decided to pave about six blocks in business section.

Rotan, Tex.—City has selected Gurley & Hill, Surveyors, Stamford, Tex., to supervise construction of 1,200 ft. of concrete sidewalk; city will also construct 1,200 ft. of gravel sidewalk, 12 ft. wide, with curbing; cost \$3,500.

San Marcos, Tex.—Precinct No. 1 of Hays County has voted \$20,000 bonds for road construction.

Shiner, Tex.—Board of Aldermen has ordered election on \$10,000 bonds for street improvements and water works.

Taylor, Tex.—City has selected Engineer Frank Mathews, Austin, to superintend paving of Main st. with vit. brick.

Waxahachie, Tex.—Italy Good Roads District will vote July 16 on \$105,000 good road bonds; Milford District will also vote \$45,000 bonds for same purpose.

American Fork, Utah.—City is considering paving of principal streets.

Fairfax, Va.—Fairfax County will construct six miles of road.

Lexington, Va.—Citizens have voted \$30,000 street and road bonds.

Centralia, Wash.—Commercial Clubs of this city and Chehalis will build 18-ft. concrete road connecting these two cities.

Spokane, Wash.—Plans have been completed for the following improvements: Grade and sidewalk, Heroy ave., 498,000 sq. ft. area, cost \$8,500; 5th ave., \$5,300; Cook st., area 757,800 sq. ft., \$14,400; grade, curb, sidewalk and pavement, with asphalt, Astor st., area 573,195 sq. ft., \$36,500; 8th ave., \$6,100; Mission ave., \$95,000; grade, curb, sidewalk and pavement with asphalt macadam Manito blvd., \$57,200; with asphalt and brick, McClellan st., \$12,200; with Haslam concrete, Indiana ave., area 747,581 sq. ft., \$43,000, and with trap road 4th ave., \$40,000.

Tacoma, Wash.—Council has ordered paving of Commerce st. South; cost \$21,810.

Bluefield, W. Va.—Board of Affairs is planning construction of sidewalks.

Huntington, W. Va.—Plans have been prepared for proposed paving; contracts will be let at early date.

Moundsville, W. Va.—Bids will be asked soon for grading road through Glendale.

Green Bay, Wis.—Council is considering \$19,000 bond issue for street paving work.

Madison, Wis.—Question of construction of subways on Park st. under tracks of Illinois Central and the Chicago, Milwaukee and St. Paul companies will be referred to State Railroad Commission.

CONTRACTS AWARDED

Whipple, Ariz.—Roads, walks, drainage, etc., to Henry Rockmark, Prescott; construction of roads, \$6,825; catch basins, \$1,490, and construction of bridge, \$600; to Johnson-Shea Co., Prescott, \$6,758 for concrete walks; \$484 for oiled walks; \$2,262 for curbs and gutters; \$400 for concrete culvert, and \$500 for steps and blocks.

Hermosa Beach, Cal.—Paving Primrose ave. with asphalt, to Barber Asphalt Paving Co., \$6,000.

Los Angeles, Cal.—Paving as follows: 10th st., to Barber Asphalt Paving Co., city, \$25,410; portions of Figueroa st., to Cecala Francescas and C. W. Brashear, \$7,418 and \$5,261, respectively.

Riverside, Cal.—Paving Mulberry st., to Johnson-Shea Co., \$9,370.

New Britain, Conn.—Paving 24,000 sq. yds., to Warren Bros. Co., Boston, with bitulithic, 5-in. concrete base and 2-in. wearing surface.

Dover, Del.—Paving with smooth tarvia pavement three streets, to United Paving Co., Atlantic City, N. J.

Boise, Ida.—Paving work in Paving District No. 15, to J. Gustaffson, Boise, 30,622 sq. yds. concrete pavement and 1,383 sq. yds. of oil macadam, as follows: Excavation 70c. per cu. yd.; completed concrete pavement, \$1.15 per sq. yd.; gutter plates in place, 5½c. per lb.; completed oil macadam along street car tracks, \$1 per sq. yd.; to Coast Contracting Co., Tacoma, Wash., 27,204 sq. yds. of concrete pavement and 1,005 sq. yds. of oil macadam, as follows: Excavation, 60c. per cu. yd.; completed concrete pavement, \$1.09 per sq. yd.; gutter plates in place, 8½c. per lb.; completed oil macadam along street car tracks, \$1.34 per sq. yd.; to Pacific Paving Co., Seattle, Wash., 90,084 sq. yds. of asphalt pavement and 12,207 sq. yds. of oil macadam, as follows: Excavation, 40c. per cu. yd.; completed asphalt pavement without guarantee, \$1.68 per sq. yd.; completed asphalt pavement with five years guarantee, \$1.78 per sq. yd.; gutter plates in place, 6c. per lb.; completed oil macadam along street car tracks, \$1.40 per sq. yd.

Bloomington, Ill.—Paving with asphalt portions of W. Washington and S. Main st., to Andrews Asphalt Co., Hamilton, O., \$1.28 per sq. yd.

Elgin, Ill.—Paving S. State st. and Walnut ave., to Arwin E. Price.

Granite City, Ill.—Paving 20th st., to A. W. Eisenmayer, \$16,814.

Joliet, Ill.—Paving Blackman ave., to Ambrose Dillon, \$2,612.10.

Bloomfield, Ind.—Gravel road, to J. P. Wright & Co., city, \$6,200.

Brazil, Ind.—Gravel road, to Gibbons & Son, \$5,000.

Crawfordsville, Ind.—Building road, to Patrick H. & John Lane, city, \$9,865.

Delphi, Ind.—Gravel road, to J. F. Peirce, city, \$6,800.

Fowler, Ind.—Building three miles of road, to Albert E. Gray, \$9,575.

Kentland, Ind.—Building Jas. Whitaker road, to Jas. Conel, \$5,950.

Monticello, Ind.—Building K. J. Mills road, to B. B. Baker, city, \$12,379.

Valparaiso, Ind.—Building roads, to W. B. Hutchinson, \$8,080, for construction of macadam road in Portage, Westchester Township; to Ray Demass, \$5,990, for macadam road in Liberty Township.

Washington, Ind.—Gravel road, to M. H. Wilson, city, \$2,648.

Winamac, Ind.—Building road, to J. M. Anderson, Medaryville, \$1,040.

Lexington, Ky.—Paving on Limestone st., with brick, to Kelley Bros., Portsmouth, \$1.85 per sq. yd.

Maysville, Ky.—Street improvements, to Kelley Bros., Portsmouth, O., \$19,000.

Estherwood, La.—Road improvements, to August Fridge, city, \$140 per mile.

Shreveport, La.—Paving, to Filbert Paving and Construction Co., \$3,979 yds. of Filbertine; to Hot Springs Construction Co., 38,344 yds. of wood block; to Southern Bitulithic Co., for 98,269 yds. of bitulithic.

Baltimore, Md.—Paving 26th st. with macadam, 76c. per sq. yd.

New Bedford, Mass.—Bitulithic paving, 13,900 sq. yds., to Warren Bros. Co., Boston.

New Bedford, Mass.—Bitulithic paving, 46,000 sq. yds., to H. L. Bartlett, city.

Bay City, Mich.—Roads, to William Carlson, \$4,384.

Duluth, Minn.—Street extensions, eleven contracts to Johnson & Johnson; three contracts to Pastoret & Lawrence Co.; four to Kern & Nickerson; two to Fairbanks, Morse & Co., and one each to E. Engle, Erick Nordquist & Co. and McAdams, Preston & Co.

Virginia, Minn.—Paving certain streets and avenues amounting to over \$100,000, to H. L. Bartlett Co., city, Central ave. with bitulithic process and also Maple st. with same material, \$73,000; to P. McDonnell, Duluth, Virginia ave., Lake blvd., Cleveland ave. and avenues of Wyoming, Mesaba and Railroad with creosote blocks.

Batesville, Miss.—Laying 1½ miles of cement sidewalks, to John Honchin, Jackson.

Jackson, Miss.—Paving contracts as follows: To Southern Bitulithic Co., Nashville, 12,000 yards, \$2.15; to Blome Co., Chicago, 11,700 yds. granite, \$1.98; to McPhelan & O'Gara, Birmingham, 8,300 yds. wood block, \$2.05; to Copeland & English, Birmingham, 6,000 yds. brick, \$2; bitulithic and granite contracts are with five years' guarantee; wood and brick have no guarantee.

Hackensack, N. J.—Improving Paterson plank road from Carlstadt Station to Passaic River, to George T. Brackett; cost \$76,000.

Harrison, N. J.—Bitulithic pavement, 6,554 sq. yds., to J. F. Shanley, Harrison.

Trenton, N. J.—Road improvements, Brunswick pike, to Russell Klockner, \$9,953; Allentown Yardville road, to McGovern Construction Co., \$33,093.

Brooklyn, N. Y.—Furnishing and delivering Hudson River road gravel in parks and on parkways in the Boroughs of Brooklyn and Queens, to Robt. T. Boyd, 515 Eastern Parkway, city, \$24,045.

Schenectady, N. Y.—Paving James st., to Schenectady Construction Co., \$2.20 per sq. yd.; grading Yorkston st., to T. R. Crane, as follows: 65c. per cu. yd. for excavation, \$7.85 per cu. yd. for retaining walls, \$98 for catch basins, and \$24 for each length of iron pipe.

Wadesboro, N. C.—Paving 16 blocks, to E. Parke Lindsay, Portsmouth.

Ashland, O.—Construction of three miles waterbound limestone macadam and three-quarter mile rolled gravel road improvements, to D. A. Phillips & Son.

Cincinnati, O.—Paving Livingston st. with granite, to A. J. Brehm, \$12,525.

Cincinnati, O.—Improvements on Montgomery ave., to Edward Ryan, \$43,720; changing grades on Compton and Lockland roads, to J. P. Baumgartner, \$940.

Elyria, O.—Paving 7,000 sq. yds. on 6th st. with asphalt block, to Andrews Asphalt Paving Co., Hamilton, \$15,550.

Bartlesville, Okla.—Paving 8,000 sq. yds.

of bitulithic, to Kansas Bitulithic Co., \$2.38 per sq. yd. and 55c. per lin. ft. for curb and gutter.

Albany, Ore.—Bitulithic paving, 22,275 sq. yds., to Warren Construction Co., Portland.

Portland, Ore.—Paving, to Pacific Bridge Co., city, for 24,338 sq. yds. of bitulithic paving, and to Warren Construction Co., city, for 59,686 sq. yds.

Bethlehem, Pa.—Paving and curbing east and west approaches to Broad st. bridge, to Cramp & Co.

Butler, Pa.—Paving Clay & Broad sts. with Du Bois and Butler brick, to N. J. Boyer; Cliff st., to Tony Morella; E. Jefferson st., to John Schaffner.

Hyde Park, Pa.—Grading, 1,900 cu. yds., 4,300 lin. ft. concrete or sandstone curbing and 5,750 sq. yds. vit. brick block paving, to Ridge Bros. Co., 407 4th ave., Pittsburgh, 50c. per ft. for concrete curb; \$1.40 per sq. yd. for brick block paving, and 30c. per cu. yd. for grading; total \$10,770.

Minersville, Pa.—Paving Sunbury st., to McConnell & Fitzpatrick Co., Pittsburg, \$2.19 per sq. yd.

York, Pa.—Paving 4,300 sq. yds. with bitulithic, to Juniata Paving Co., city.

Galveston, Tex.—Grading, ditching and paving with mudshell two roads on mainland paralleling Santa Fé, Galveston, Houston and Henderson Railway tracks, distance 18 and 16 miles, respectively, to J. C. Kelso, city, total \$150,657.

Spottsylvania, Va.—Building roads in Courtland and Chancelor districts, to Robert G. Lassiter; cost \$40,000.

Spokane, Wash.—Grading and sidewalks, to Massie Bros. & Long, Dalton ave., \$2,640; estimated cost \$3,080; to C. M. Payne, Jackson ave., \$5,885, estimated cost \$6,740; to same bidder, Madison st., Rowan to Wellesley ave., \$7,874, estimated cost \$9,600; to Mitchell Bros., Southeast blvd., \$3,717, estimated cost \$4,000; to Massie Bros. & Long, West Point rd. and Hollister rd., \$4,200, estimated cost \$4,800.

Princeton, W. Va.—Paving, to T. Towlec & Co., city, \$35,000; tarvia will be used.

BIDS RECEIVED

Santa Ana, Cal.—Furnishing road oil: Associated Oil Co., \$1.18 per bbl. of 42 gals.; J. R. Ott Contracting Co., Los Angeles, \$1.13, and Union Oil Co., \$1.28.

Hartford, Conn.—Construction of State road work: Town of Ledyard, 5,150 lin. ft. grading on the River road, 14-ft. travel way, including four 15-in., one 18-in. and one 12-in. tile culverts and one reinforced concrete arch culvert; A. Brazos & Sons, Middletown, \$14,395 lump sum, 40c. per lin. ft. for telford, and 80c. per lin. ft. for rubble drain; H. L. M. Ladd, New London, \$9,500, 50c., 50c.; Eldredge Construction Co., Mystic, \$7,445, 45c., 25c.; John W. Polcaro, Pittsfield, Mass., \$11,040, 90c., 80c.; Ahern Bros., Norwich, \$8,500, 60c., 95c. Town of Meriden, 5,738 lin. ft. macadam-telford on West Main st., 14-ft. travel way, including one 18-in. and three 12-in. tile culverts and 10-in. tile drain pipe; O. T. Benedict, Pittsfield, Mass., \$2.29 for macadam, \$2.99 for telford, \$1 for rubble drain, 90c. per sq. yd. for cobble gutters; Thomas Kearney, Meriden, \$1.63, \$1.83, 65c., 60c.; C. W. Tyron, Meriden, \$1.49, \$2.10, \$1, 65c.; Suzio & Toner, Meriden, \$1.75, \$2.45, 75c., 60c. Town of Coventry, 10,000 lin. ft. gravel-telford, on the Willimantic turnpike, 14-ft. travel way, including one reinforced concrete arch culvert; O. T. Benedict, Pittsfield, Mass., \$1.59 for gravel, \$2.09 for telford, 80c. for rubble drain, 80c. per sq. yd. for cobble gutters; A. Brazos & Sons, Middletown, \$1.95, \$2.35, 80c., 70c.; A. Vito, Thompson, \$1.45, \$2.20, \$1.10, 80c.; Sternberg & Cadwell, West Hartford, \$1.39, \$2, \$1, 50c.; A. Brazos & Sons, Middletown, \$1.75, \$2.50, \$1, 60c.; E. G. Pardee, Bethany, \$1.69, \$2.34, 95c., 65c.; Ahern Bros., Norwich, \$1.35, \$1.90, \$1.10, 75c. Town of Putnam, 4,700 lin. ft. macadam-telford, on Dayville road, 16-ft. travel way, including two 15-in., three 18-in., one 24-in. and one 20-in. tile culverts; O. T. Benedict, Pittsfield, Mass., \$2.99 for macadam, \$3.59 for telford, 80c. for rubble drain; A. Vito, Thompson, \$2.98, \$3.69, \$1.10; A. D. Bridge's Sons Co., Hazardville, \$2.93, \$3.73, \$1. Town of Clinton, 16,016 lin. ft. graded telford road, on Killingworth turnpike, 14-ft. travel way, including five 15-in., two 12-in., one 24-in., three 20-in. and three 18-in. tile culverts and four concrete arch culverts; Joseph D'Aloia, West Somerville, Mass., \$14,291 lump sum for grading, \$2.25 per lin. ft. for telford, 85c. for rubble drain, \$5.50 per cu. yd. for masonry walls; B. D. Pierce, Jr., Co., Bridgeport, \$23,520, 65c., 70c.; A. Brazos & Sons, Middletown, \$40,040, 60c., 75c., \$5; Roger Kennedy, Middletown, \$38,758, 80c., 90c. Town of Killingsworth, 11,485 lin. ft. graded telford road on the Clinton turnpike, 14-ft. travel way, including four 24-in., two 20-in., and one 15-in. tile culverts and one reinforced concrete arch culvert; B. D. Pierce, Jr., Co.,

Bridgeport, \$15,900 for grading, 65c. for telford and 70c. for rubble drain; A. Brazos & Sons, Middletown, \$24,118, 40c., 80c.; Roger Kennedy, Middletown, \$18,605.70, \$1.40, 80c. Town of Salem, 5,130 lin. ft. gravel-telford, on the Colchester turnpike, 14-ft. travel way, including one 24-in., three 15-in., two 12-in., two 18-in. and one 20-in. tile culverts: A. Brazos & Sons, Middletown, \$3.60 for gravel, \$4 for telford, 80c. for rubble drain, 65c. per sq. yd. for cobble gutters; Roger Barnes, New London, \$1.49, 90c., \$1.25 and 24c.; Ahern Bros., Norwich, \$3.35, \$3.95, \$1.10, 75c. Town of Colchester, first section, 3,753 lin. ft. gravel-telford on the New London turnpike, including four 15-in. and four 12-in. tile culverts: A. Brazos & Sons, Middletown, \$2.14 for gravel, \$2.54 for telford, 80c. for rubble drain; Roger Barnes, New London, \$1.59, \$2.49, \$1.25; Ahern Bros., Norwich, \$1.25, \$1.85, \$1; Roger Kennedy, Middletown, \$1.57, \$2.37, 90c.; Merritt & Bush, Stamford, \$1.75, \$2.25, \$1. Second section, 2,005 lin. ft. gravel-telford, same road, including one 12-in. and one 15-in. tile culverts: A. Brazos & Sons, Middletown, \$2.35 for gravel, \$2.75 for telford, 80c. for rubble drain, 70c. for cobble gutters; Roger Barnes, New London, Conn., \$1.49, \$2.39, \$1.25, 24c.; Ahern Bros., Norwich, \$2.81, \$3.50, \$1, 75c.

New Britain, Conn.—Paving 24,000 sq. yds. with bitulithic, 5-in. concrete base and 2-in. wearing surface: M. F. Dollard, Albany, N. Y., Mack block, \$2.35 per sq. yd.; Robert W. Henson, Geneva, N. Y., Bessemer block or Bessemer fireclay, \$2.465; Bessemer paver, 3½-in., \$2.365; Clearfield, \$2.515; Field, Barker & Underwood, Philadelphia, Pa.—Mack block, \$2.45; Bessemer block, \$2.52; Metropolitan block, \$2.59; Peter Suzio Co., Hartford, Mack block, \$2.70; Fred T. Ley & Co., Springfield, Mass., Bessemer block, \$2.65; Bessemer fireclay, \$2.63; Bessemer paver, 3½-in., \$2.56; Mack block, \$2.66; Field, Barker & Underwood, Philadelphia, Pa., L. L. Y. P., 3-in., \$3.12, or U. S. wood block, 3½-in., \$3.24; Peter Suzio Co., Hartford, U. S. wood block, 3-in., \$3.30, or U. S. wood block, 3½-in., \$3.50; Warren Bros. Co., Boston, Mass., bitulithic, \$2.42; Field, Barker & Underwood, S. L. Y. P., 3-in., \$2.94, or U. S. wood block, 3½-in., \$3.12; all 2,500 ft. haul; overhaul each 100 ft., M. F. Dollard, .015c.; all others, .01c.—F. N. Oldershaw, City Engineer.

Dover, Del.—Paving three streets. Nelson Meredith, Chambersburg, Pa., excavations 50c., macadam 70c., tarvia X 99c., extra hauling 75c.; Commonwealth Construction Co., New York, excavations 55c., macadam 90c., tarvia \$1.24, extra haul 10c.; John A. Clark, Wilmington, Del., excavations 60c., macadam 85c., tarvia \$1.30, extra haul 10c.; B. F. Wickersham, Kennett Square, Pa., excavations 50c., macadam 85c., tarvia \$1.15, extra haul 50c.; United Paving Co., Atlantic City, excavations 42c., macadam 69c., tarvia 89c., extra haul 21c.; James A. Hiron and J. A. Stewart, Dover, excavations, 35c., macadam 74c., tarvia \$1.14, extra hauling 10c.; Dover Lumber and Milling Co., excavations 34c., macadam 74 3-10c., tarvia \$1.02 6-10c., extra hauling 43c.; Horgan Contracting Co., Wilmington, excavations 50c., macadam 80c., tarvia \$1.10, extra hauling 60c.; Lon W. Clifton, Dover, excavations 28c., macadam \$1.05, tarvia 90c., hauling 12c.

Elgin, Ill.—Paving Spring st., Standard Paving Co., Chicago, \$44,789; McCarthy Improvement Co., Davenport, Ia., \$52,875; Logan & Gieritz, Elgin, \$53,000, and Robt. Green & Sons, Chicago, \$54,374.

Fort Wayne, Ind.—Paving, John st., Oscar F. Menefee, \$2.80 per sq. yd. for Metropolitan block, 50c. per sq. yd. for relaying old brick; Derheimer & Co., \$2.67 for Bessemer block, \$2.93 for Athens block, \$2.93 for Nelsonville block; Moellering Construction Co., \$2.93 for Metropolitan block, 45c. for relaying old brick. Alley paving: Alley between Washington and Jefferson sts., from Fulton st. to Broadway, O. F. Menefee, \$2.60 per sq. yd. for Metropolitan block; Derheimer & Co., \$2.67 for Bessemer block, \$2.62 for Athens block, \$2.62 for Nelsonville block; Moellering Construction Co., \$2.62 for Metropolitan block; Fairfield side-walks, 5½ ft. cement sidewalks on east side and 7 ft. walks on west side, from Jefferson to Brackenridge sts., O. F. Menefee, 61c. per lin. ft. for 5½-ft. walks, 81¼c. for 7-ft. walks; C. W. Gallmeyer, 57c., 77c.; George Wilhelm, 68c., 97c.; Derheimer & Co., 70c., 80c.; Moellering Construction Co., 61c., 93c. Pontiac st. walks, north side, 5 ft. wide, O. F. Menefee, 61c. per lin. ft.; C. W. Gallmeyer, 55c.; George Wilhelm, 62c.; Moellering Construction Co., 78c. Belle ave. sidewalks, 4-ft. walks on north side, from Fox ave. to first alley west, O. F. Menefee, 48c. per lin. ft.; C. W. Gallmeyer, 44c.; George Wilhelm, 50c.; Moellering Construction Co., 51c. Boulevard sidewalks, 6-ft. cement sidewalks on both sides of Forest Park blvd., from Lake ave. to State st., John F. Brooks, 86c. per lin.

ft.; C. W. Gallmeyer, 86c.; Derheimer & Co., \$1.23; Moellering Construction Co., \$1.02.

Lawrence, Mass.—Paving, William J. Carroll, granite block on gravel \$1.68, old block on gravel 93c., old block on concrete \$1.68; M. J. McGawley, Philadelphia block on gravel \$2.61, on concrete \$3.37; Boston block on gravel \$2.80, on concrete \$3.56; Hassam block on concrete \$3.10; other streets, old block on gravel 93c., on concrete \$1.65; Joseph Wagenbach & Co., Philadelphia block on gravel \$2.50, on concrete \$3.20; Boston block on gravel \$2.65, on concrete \$3.35; Hassam block on concrete \$3.10, old block on gravel 84c., on concrete \$1.64; wood block on concrete \$3.85; J. B. O'Rourke & Co., old blocks on gravel \$1.10, on concrete \$1.90; Philadelphia blocks on gravel \$2.55, on concrete \$3.30; Boston blocks on gravel \$2.60, on concrete \$3.42; Hassam blocks on concrete \$3.25, wood blocks on concrete \$3.30; Coleman Bros., Philadelphia blocks on gravel \$2.50, on concrete \$3.40; Boston blocks on gravel \$2.60, on concrete \$3.64; Hassam blocks on concrete \$3.15; M. O'Mahoney estate, old blocks on gravel 73c., on concrete \$1.53; Hassam Paving Co., Philadelphia blocks on gravel \$2.48, on concrete, \$3.17; Boston blocks on gravel \$2.71, on concrete \$3.40; Hassam blocks on concrete \$2.49, wood blocks on concrete \$2.94; Hassam compressed concrete \$1.85; Phillip Holland, Philadelphia blocks on concrete \$3.04; Boston blocks on gravel \$2.48, on concrete \$3.24; Hassam blocks on concrete \$2.91; Lawrence Granite Co., wood on concrete \$3.75; Hassam compressed concrete \$1.90; Philadelphia block on concrete \$3.25; Boston block on concrete \$3.40; Hassam block on concrete \$2.99; Superintendent of Streets P. J. Lyons, Philadelphia block on concrete \$3.10; Boston block on sand, \$2.50; Boston block on concrete \$3.20; Hassam block on concrete \$3; old blocks \$1 on sand and \$1.60 on concrete.

Billings, Mont.—Street paving, District 47, to be paved with creosoted wood block, James Kennedy, \$3.35 per sq. yd.; L. W. Schruk, Fargo, \$3.64 and \$3.49 per sq. yd., depending on the particular blocks to be designated; Spokane Construction Co., \$3.31; M. Ford, Cedar Rapids, Ia., \$3.45½; Bacheller & Powell, Billings, \$3.39 and \$3.64; Cook & Nelson, Helena, \$3.39; Wesch & Berry, Billings, \$3.38; A. Saner, Butte, \$3.45. For District No. 48, to be paved with vit. brick, James Kennedy, \$3.48 per sq. yd.; L. W. Schruk, Fargo, \$3.78; M. Ford, Cedar Rapids, Ia., \$3.49½; Spokane Construction Co., \$3.89 for Helena brick and \$4 for Burlington brick; Bacheller & Powell, Billings, \$3.69½; Cook & Nelson, Helena, \$3.39; A. Saner, Butte, \$3.92.

Helena, Mont.—Improvements in District No. 35; detailed bids on some of the items, (a) Louis Johnson, total \$74,121; (b) McMillan & Fowler, \$75,245; (c) Miracle-Tropp Co., \$76,442; (d) S. Birch Sons Construction Co., \$81,954.

19,000 cu. yds. excavation, (a) 65c., (b) 85c., (c) 65c., (d) 65c.; 32,100 lin. ft. concrete curb, (a) 40c., (b) 40c., (c) 45c., (d) 45c.; 197,000 sq. ft. concrete walks, (a) 16½c., (b) 14½c., (c) 17c., (d) 18c.; 3,920 lin. ft. crosswalks, (a) \$1.25, (b) \$1.25, (c) \$1.25, (d) \$1.50; 16,900 lin. ft. old walks removed, (a) 1c., (b) 1¼c., (c) 1c., (d) 1c.; 3,500 cu. yds. loam, (a) \$1.40, (b) \$1.50, (c) \$1.50, (d) \$1.60.

Dunkirk, N. Y.—Paving (a) with asphalt Swan st. and (b) resurfacing with asphalt W. 4th st.; (a) Swan st. on stone curb and on concrete curb and gutter, respectively, Henry Mayer, Sr., Erie, Pa., (a) \$17,768 and \$18,250, (b) \$17,047; R. C. Ruthvan, Scranton, Pa., (a) \$18,904 and \$20,110, (b) \$19,436; Henry P. Burgard Co., Buffalo, N. Y., (a) \$17,178 and \$17,275, or \$16,440 and \$16,537 for brick, (b) \$16,637; Warner Quinlan Asphalt Co., Syracuse, N. Y., (a) \$19,129 and \$19,563, (b) \$17,441; John McCormick & Son, Erie, Pa., (a) \$18,764 and \$18,861, (b) \$17,346; Jas. Paul Morrissey, city, (a) \$17,905 and \$18,532, or \$17,331 and \$17,958 on brick, (b) \$17,600; detailed bid of Henry P. Burgard Co., lowest bidder on both streets: Swan st., 2,600 cu. yds. earth excavation, 40c.; 8,200 sq. yds. 1½-in. sheet asphalt, 4-in. concrete foundation, \$1.59, brick \$1.50; 8,424 lin. ft. stone curb furnished and set, 48c.; 32 lin. ft. stone circular corners furnished and set, 90c.; 128 lin. ft. stone margin at curb, furnished and set, 50c.; 120 lin. ft. stone curb reset, 20c.; 4,824 lin. ft. concrete curb and gutter, 50c.; 4,850 lin. ft. 4-in. drain tile furnished and laid, 8c.; W. 4th st., 94,30 sq. yds. sheet asphalt, \$1.28; 1,140 sq. yds. brick gutter, laid, \$1.40; 280 lin. ft. stone curb, furnished and set, 48c.; 270 lin. ft. circular curb corners, set, 90c.; 1,000 lin. ft. dressing old curb, 10c.; 3,000 lin. ft. 4-in. drain tile, furnished and laid, 8c.; 500 sq. yds. o.d. foundation taken up and relaid, 35c.; 400 cu. yds. excess fill tar concrete, \$3; 30 lin. ft. marginal curb stones, set, 48c.; 320 lin.

ft. resetting marginal curb, 20c.; 4,000 lin. ft. resetting old stone curb, 20c.

New York, N. Y.—Furnishing materials and repairing asphalt pavement on the North, East and Harlem Rivers, Sicilian Asphalt Paving Co., 41 Park Row, lowest bidder, \$1.30 per sq. yd.

Harrisville, Pa.—Construction of 4,637 ft. of road, extending from the Mercer Township line on Mercer st. to the Mercer Township line on Franklin st., in Harrisville Borough, in the County of Butler: Hatten & Co., Dubois, \$16,325, slag bottom, Dubois & Butler W. C. block top; \$16,653, slag bottom, Dubois & Butler repair brick; \$17,088, limestone bottom, Dubois & Butler W. C. block top; \$17,418, limestone bottom, Dubois & Butler repair block top. Norman J. Boyer, Butler, \$13,454, slag bottom, Dubois & Butler W. C. brick top; \$12,795, slag bottom, Butler Brick & T. Co. W. C. brick top; \$13,687, slag bottom, Bessemer repair block top; \$13,784, slag bottom, Dubois & Butler repair brick top; \$14,444, slag bottom, Porter National Butler repair brick top; \$14,279, slag bottom, U. S. Sewer Pipe Co. repair brick top. Standard Bitulithic Co., 50 Church st., New York, \$14,865, Ligonier stone bottom, Warrenite top. Reinhart Bros., East Liverpool, O., \$12,044, gravel bottom, wire cut brick or block top. Rudolph & Means, Punxsutawney, \$13,382, stone or slag bottom, Dubois & Butler W. C. Block top. Frederick Robinson, Meadville, \$12,293, gravel bottom, Bradys Run W. C. or Pennsylvania clay brick top; \$12,664, gravel bottom, Dubois & Butler W. C. block top; \$12,994, gravel bottom, Dubois & Butler rep. block top. McLaughlin Contracting Co., Pittsburg, \$14,656.60, slag or natural stone bottom, brick top. John Schaffner, Butler, \$12,960, air-cooled slag bottom, Dubois & Butler W. C. brick top; \$12,630, machine slag bottom, Dubois & Butler W. C. brick top; \$13,289, air-cooled slag bottom, Dubois & Butler rep. block top; \$13,619, air-cooled slag bottom, Porter natural block top; \$13,619, air-cooled slag bottom, Porter block top; \$13,784, air-cooled slag bottom, Toronto block top; \$13,289, machine slag bottom, Porter or U. S. block top; \$13,455, machine slag bottom, Toronto or U. S. block top; \$13,125, machine slag bottom, U. S. Sewer Pipe Co. W. C. brick top. South Shore Construction Co., Erie, \$11,950, gravel bottom, Bessemer block top; \$13,434, slag bottom, Bessemer block top; \$14,671, limestone bottom, Bessemer block top; \$11,126, gravel bottom, Pennsylvania Clay W. C. brick top; \$12,692, slag bottom, Pennsylvania Clay W. C. brick top; \$13,929, limestone bottom, Pennsylvania Clay W. C. brick top; \$10,796, gravel bottom, Butler Brick and Tile Co.'s W. C. brick top; \$12,197, slag bottom, Butler Brick and Tile Co.'s W. C. brick top; \$13,517, limestone bottom, Butler Brick and Tile Co.'s W. C. brick top.

Seattle, Wash.—Regrading and filling Westlake ave., including construction of bridges at (a) Evanston ave., (b) Stone ave., (c) Fremont ave.: Holt & Jeffery, (a) \$345,340, (b) \$368,658, (c) \$343,077; Grant Smith & Co., and Stillwell, (a) \$346,517, (b) \$358,883, (c) \$381,132; grading and regrading Dexter and other avenues: Olson & Mellen, \$135,769; West Coast Construction Co., \$166,318; Grant Smith & Co. & Stillwell, \$145,519; Holt & Jeffery, \$164,189; N. McKinnon, \$150,339; And. Peterson & Co., \$155,797.

SEWERAGE

Brighton, Ala.—City is considering construction of storm sewers and various street improvements.—Potten & Ohl, Birmingham, Engineers.

Oakland, Cal.—Bids will soon be asked for constructing south side sewer; cost about \$30,000.—I. N. Chapman, City Engineer.

Pasadena, Cal.—Plans have been adopted for storm water sewer; work consists of open conduit, concrete construction, distance 1,500 ft.; remainder reinforced concrete covered conduit; cost \$12,760.—Heman Dyer, City Clerk.

Pasadena, Cal.—City Engineer S. J. Van Ornum has recommended vit. salt-glazed pipe sewers to be constructed on 12 streets; total cost \$19,639.

Sisson, Cal.—City Trustees are considering construction of sewer system.

Bridgeport, Conn.—Mayor E. T. Buckingham has recommended construction of larger sewers.

Winsted, Conn.—Cost of installing proposed sewer system has been estimated at \$106,000. Business Men's Association is interested.

Twin Falls, Ida.—Engineer Charles H. Mull has completed plans and specifications for installation of sewers for remainder of this city.

Canton, Ill.—Council is considering construction of trunk line sanitary sewer from 3d ave. to supplementary sedimentation tank to be established in northeast.

Dixon, Ill.—Board of Local Improvements

has decided to construct vit. tile sewer on N. Ottawa st.; cost \$2,747.

Geneva, Ill.—Engineer H. L. Wells has completed plans for sewer and drainage system; cost \$80,000.—H. B. Fargo, Superintendent Board of Local Improvements.

Glenellyn, Ill.—Plans are being prepared by Etna Engineering Bureau, 125 LaSalle st., Chicago, for sewer system.

Harvard, Ill.—Bids will be received the first week in July for construction of 2,400 ft. of vit. pipe storm sewer, 24 to 12 in. in diameter.—Hugh M. Price, 140 Dearborn st., Chicago, Engineer.

Wheaton, Ill.—Plans are being prepared by Engineer A. L. Webster for \$40,000 tile and cement pipe storm sewer, 24 in. to 6 ft. diameter.

Churubusco, Ind.—Town Board will soon ask for bids for construction of proposed central sewerage system; cost \$5,636.—E. K. Strong, Columbia, City Engineer.

Evansville, Ind.—Board of Public Works will order construction of sewer on three streets; total length 16 blocks.

Eagle Grove, Ia.—Bids for constructing pipe sewers will be received about July 10; cost \$80,000.—N. Pontious, Engineer.

Newton, Ia.—Bids will be asked at once for extension of sewer system.

Columbus, Kan.—Citizens will vote June 28 on \$35,000 bonds for main sewers and disposal plants.—F. H. Hawkins, City Clerk.

Lake Charles, La.—First Sewerage District will vote July 14 on \$160,000 bonds for construction of sewer system.—W. G. Kirkpatrick, Jackson, Miss., Constructing Engineer.

Elkton, Md.—Citizens will vote July 11 on \$60,000 sewer, water and electric light bonds.—Arthur Mitchell, President, Board of Commissioners.

New Bedford, Mass.—Council has passed order appropriating \$50,000 for proposed intercepting sewer.

Detroit, Mich.—City Engineer Robt. H. McCormick is preparing plans for sewer to be constructed in 23d st., section 4; cost \$88,000.—J. J. Haarer, Commissioner Public Works.

Escanaba, Mich.—Council has adopted resolutions for construction of two sanitary sewers; cost \$5,400.

Eveleth, Minn.—Plans are being prepared by City Engineer for laying sewer and water pipes in newly annexed sections.

St. Cloud, Minn.—Sewer will be constructed in eastern part of city; cost about \$3,000.

Ellisville, Miss.—Construction of sewerage system is being considered.

Springfield, Mo.—Council is considering construction of sewer in First Ward.—H. G. Horton, City Engineer.

Great Falls, Mont.—Construction of sewer, cost \$5,000, in business district, is being considered.

Grand Island, Neb.—City Engineer Jay Leffey is preparing plans for six blocks of vit. pipe sewer in District No. 19.—H. E. Clifford, City Clerk.

Audubon, N. J.—Plans by Borough Engineer J. J. Albertson and Robinson & Wagner, New York, for construction of sewer system have been approved; cost \$65,000.

Madison, N. J.—Geo. W. Fuller, 170 Broadway, New York, N. Y., will prepare plans for sewer system.

North Plainfield, N. J.—Citizens have voted to construct sewer system at cost of \$300,000.

Sea Isle City, N. J.—Citizens will vote Aug. 16 on \$35,000 bonds for sewage disposal plant.

Washington, N. J.—Bids will be received June 27 by Council for \$60,000 sewer system bonds.—A. J. Craft, Borough Clerk.

Glen Cove, L. I., N. Y.—W. B. Fuller, Consulting Engineer, 150 Nassau st., New York, N. Y., has recommended construction of 18 miles of 12 to 8-in. vit. pipe sewers, and disposal of fine screening and discharge into 21 ft. depth of water in Hempstead Bay, at total cost of \$80,500.

Schenectady, N. Y.—Council has adopted ordinance for laying sewer in High st.

Tonawanda, N. Y.—Board of Public Works has directed that 4,700 ft. of sewer be constructed in various parts of North Tonawanda; cost \$2,464.

Cincinnati, O.—Plans will be prepared by City Engineer for sewer to be constructed near Auburn and Dorchester aves.

Hamilton, O.—Plans have been prepared by City Engineer F. E. Weaver for sanitary sewer on South C st.; cost \$2,703.

Miamisburg, O.—Council has passed resolution for constructing a sewer in Spruce st.; cost \$4,055. City Clerk McKnight can be addressed.

Middletown, O.—Bids will soon be received by Board of Public Service for the construction of 6,850 lin. ft. of reinforced concrete sewer; cost \$80,000.—W. E. McElree, City Engineer.

Port Clinton, O.—Council has passed a resolution for construction of sewers in Sewer District No. 5.—J. A. Singler, Clerk.

Vale, Ore.—Bids will be received July 25 for \$30,000 sewer bonds.

Erie, Pa.—Bids will be advertised for construction of sewer in Summit st.

Montrose, Pa.—Borough Council has made plans for sewage disposal at cost of several hundred dollars.

Philadelphia, Pa.—Governor Stuart has approved plans for sewage disposal plant to be installed in northeastern section of city, including Pennypack Creek Valley.

Providence, R. I.—Residents of Darlington are urging construction of large trunk sewer from Tweed st. to Newport ave.

Woonsocket, R. I.—Council has passed resolution appropriating \$10,710 additional for sewer construction.

Sioux Falls, S. D.—Plans are being prepared by L. P. Wolff, Consulting Engineer, 204 Essex Bldg., St. Paul, Minn., for the construction of complete main lateral sewer system; cost \$200,000.—L. Larson, City Recorder.

Erwin, Tenn.—Citizens will vote June 30 on \$20,000 bonds for sewer construction and street improvements.

Prosser, Wash.—Plans have been adopted by Council for sewer system; cost \$16,000; election on bonds will be held.

Tacoma, Wash.—Commissioner of Public Works will ask for bids for construction of sanitary sewers on McKinley ave. and G st.; cost \$3,967.

Algoma, Wis.—Council has decided to install sewerage system in principal part of city.

West Salem, Wis.—Village Council will construct sewer in Rose st.

CONTRACTS AWARDED

San Francisco, Cal.—Construction work on 7th st. sewer, to Metropolis Construction Co., \$159,600.

Bridgeport, Conn.—Sewers, to Pierce Manufacturing Co., for about 475 ft. of sewer in Madison ave. with about 100 ft. of rock excavation, \$1.38 for pipe and \$4.25 per yd. for rock excavation; other bidders were Burns & Co., \$1.35 and \$5; B. D. Pierce, Jr., Co., \$1.47; Goddard ave. sewer, about 200 ft., to Pierce Manufacturing Co., \$8c. for pipe and \$4.65 for rock, about 50 yds.; other bidders were Burns & Co., \$1.07 and \$5; B. D. Pierce, Jr., Co., 97c. and \$4.75; E. T. Doolittle, \$1.10 and \$5.25; Iranistan ave., 300 ft., to B. D. Pierce, Jr., Co., 98c. for pipe and \$4.75 for rock, about 100 yds.; other bidders, Pierce Manufacturing Co., \$1.03 and \$4.75; Burns & Co., \$1.03 and \$5; E. T. Doolittle, \$1.10 and \$5.15; Fox st., about 260 ft., 50 yds. of rock, to Burns & Co., 98c. for pipe and \$5 for the rock; other bidders, Pierce Manufacturing Co., \$1.13 and \$4.75; B. D. Pierce, Jr., Co., \$1.07 and \$5; E. T. Doolittle, \$1.10 and \$5.15; Eaton st. sewer, 640 ft., no rock, B. D. Pierce, Jr., Co., 89c.; Pierce Manufacturing Co., 93c.; Burns & Co., 95c.; E. T. Doolittle, \$1.10; Osborne st. sewer, 75 ft., to Pierce Manufacturing Co., 48c.; B. D. Pierce, Jr., Co., 57c.; Burns & Co., 70c.; E. T. Doolittle, 87c.; construction of a number of sewer wells in various parts of the city, to Pierce Manufacturing Co., \$37; B. D. Pierce, Jr., Co., bid \$37.25, and Burns & Co., \$40.

Marselles, Ill.—Constructing sewer, to Green Sons Co., \$26,744.25.

Muscataine, Ia.—Papoos sewer extension for Rock Island Railroad, to J. H. Seldon.

New Hampton, Ia.—Sewer and water main, to Fraser & Danforth, Rochester, Minn., 55c. per ft. for construction of 4,000 ft. of 8-in. sewer, and 48½c. per ft. for construction of 3,000 ft. of 4-in. water mains; manholes, flush tanks, hydrants and valves at \$40, \$68, \$34, \$34.50 and \$14.50, respectively.

Sioux City, Ia.—Constructing storm sewer in Prospect st., to L. Christensen & Co., city.

Hartford, Ky.—Sewer system, to Frank May, \$13,014.

Winchester, Ky.—Building sewer system, to E. T. Lewis Co., Nashville, Tenn.

Boston, Mass.—Building sewage works in Gainsborough st., to McCarthy & Walsh, \$5,181; to Chas. R. Gow, 79 Milk st., Roslindale branch of the Stony Brook conduit, \$40,870; to Jas. F. Murphy, concrete and pipe surface drains in Lucerne, Claxton, Floyd and Stratton sts. and Massasoit ave. Dorchester, \$7,696; constructing section 7, Stony Brook conduit, to Wm. J. Barry, 30 Fenwood road, Roxbury, \$75,326; other bidders, Chas. R. Gow Co., \$82,105; Antony Cefalo, \$83,553; Bruno & Pettiti, \$83,623; Coughlan & Shiels, \$84,929; Coleman Bros., \$85,610; McCarthy & Walsh, \$87,167; Jones & Meehan, \$89,572; John J. Palvey, \$89,774; Metropolitan Construction Co., \$90,595; P. W. Hill, \$93,221, and Luke D. Mullen, \$93,224.

North Andover, Mass.—Furnishing and laying about 6,300 lin. ft. pipe sewer, to Arthur A. O'Mahoney, 4 West st., Lawrence.

Springfield, Mass.—Installing about 5,000 ft. of sewers in Elm st. and the Park

Square, preparatory to the paving of street and square, to E. B. Roberts, Boston, \$4,740.40; D. A. Dorey, Natick, \$5,923; Lopardo & Way, Springfield, \$7,255; Henry Spinach Contracting Co., Waterbury, Conn., \$8,677.25.

Ann Arbor, Mich.—Construction of six sewers, to Koch Bros.; to E. L. Schneider, for two sewers.

Hubbll, Mich.—Sewers, to Pearce Hardware and Furniture Co., Lake Linden, \$1.87 per ft. for 300 ft. of 30-in. sewer tile; 14c. per ft. for 100 ft. of 8-in. sewer tile; \$14 for one 30x30 Y; \$14 for one 30x30x20 Y, and \$7.48 for one 30x18 reducer.

Rochester, Minn.—Sanitary sewers, to W. C. Frasser, city, \$4,000, and to Maas & McAndrews, \$1,000.

Elmira, N. Y.—Building seven sewers, to Dennis Conklin.

Bellefontaine, O.—South Main st. sewer, to W. H. Ralston, Mt. Vernon, \$2,419.

Hamilton, O.—Sewer on Sycamore st., to Garver Contracting and Construction Co., \$4,605.

Middletown, O.—Building 6,850 ft. concrete sewer, to Garver Construction Co., Hamilton.

Oklahoma City, Okla.—Constructing sewers, to Stokes Construction Co., and to J. O. Severns, Oklahoma City; total cost about \$12,000.

Portland, Ore.—Powell st. sewer system of Brooklyn district, to Bechill Bros., 166 Fay st., \$19,576, and E. 8th, E. 9th and E. 10th sts., to William Lind, \$18,683.

Portland, Ore.—Furnishing material for 30-in. submerged pipe line across Willamette River, to Crane Co., \$30,800.

Dallas, Tex.—Building 6-in. pipe sewers, to San Antonio Sewer Pipe Co., 11½c. per ft.

Tacoma, Wash.—Vit. clay pipe sanitary sewer, to Tignanelli & Paine, \$4,900.

Ft. D. A. Russell, Wyo.—Constructing a storm drain, to F. Perry Williams, Cheyenne, \$43,872.

BIDS RECEIVED

St. Louis, Mo.—Second section of South Harlem joint sewer, Bambrick Bros. Construction Co., 5229 St. Louis ave., city, \$236,650; Fruin & Colmon, city, \$239,681; John F. McMahon, city, \$245,040.

New York, N. Y.—Construction of the outlet sewer and appurtenances under the pier at the foot of 40th st., North River; Joseph Moore, 161 East 98th st., \$12,694; Robert J. Rooney, \$18,632; Smith & Fitzgerald, \$14,924; Merrill-Ruckgaber Co., 50 Church st., \$12,409; Willis J. Walsh, \$16,499; J. William Engineering and Constructing Co., \$14,567; Edward J. Grannis, \$13,079.

Wilkes-Barre, Pa.—Building sewers, Luzerne Construction Co., \$1,644; William Bown & Co., \$1,624.50; Alfred Hand, \$1,895.24; R. M. Rosser, \$1,796.44; Dilley & Harkness, \$1,758.41; James E. Gibbons, \$1,875.52; D. M. Rosser Engineering and Contracting Co., \$2,047.47; C. M. Reilly, \$2,160.65.

Seattle, Wash.—Constructing Lake Washington section of north trunk sewer, Grant Smith & Co., lowest bidders, \$327,169 and \$826,445.

WATER SUPPLY

Albertville, Ala.—Citizens will vote July 12 on \$25,000 bonds for building water works system.—W. P. Goodwin, Mayor.

Alliceville, Ala.—City is considering construction of water works.

Bessemer, Ala.—Council is considering granting of franchise to the Birmingham Water & Electric Power Co.; dam will be constructed across Warrior River to furnish city with water and electric light.

Safford, Ariz.—City will construct reservoirs and dams; water will be piped from Graham Mountain, distance 8 miles.

Eureka Spring, Ark.—City will expend \$50,000 in improvements to water works.—W. H. Elliot, City Engineer.

Oakland, Cal.—Bay Cities Water Co. will spend more than \$5,000,000 in installing distributing systems in Oakland, Berkeley, Alameda and Piedmont.—C. L. Gilman, Engineer.

Manchester, Conn.—Water district is considering installation of independent water system.

ChIPLEY, Fla.—Issuance of bonds for water works is being considered.

Jacksonville, Fla.—Board of Bond Trustees has rejected all bids for constructing 3,000,000-gal. reservoir.—R. N. Ellis, Superintendent.

Orlando, Fla.—City is considering expenditure of \$100,000 for construction of water works.—J. O. Frels, Orlando, Engineer.

Reidsville, Ga.—Citizens will vote on \$10,000 bonds to perfect water works.

Centralla, Ill.—Citizens will vote July 2 on \$50,000 bonds for proposed reservoir.

Peoria Heights, Ill.—Extension of present water works system will be considered.

Sterling, Ill.—Franchise of Sterling Water Co. expires this year and city is considering whether to purchase plant and operate it as municipal plant or grant franchise.

Kingsley, Ia.—Citizens have voted to install a water works system; bids will be asked for construction.—J. H. Beardsley, City Clerk.

Tabor, Ia.—Citizens will vote on \$5,000 bonds to enlarge water system.

Canton, Kan.—Citizens have voted \$30,000 water works and electric light bonds.

Pittsburg, Kan.—Council is considering election July 12 on \$300,000 water bonds.

Republican City, Kan.—Citizens have voted \$17,000 bonds for construction of water system.

Hodgenville, Ky.—City proposes to install water system.

Topsham, Me.—Citizens have voted to extend water mains at cost of \$11,000.

Elkton, Md.—Citizens will vote July 11 on \$60,000 water, electric and sewer bonds.—H. Arthur Mitchell, President Commissioners.

Westernport, Md.—City is considering \$100,000 bond issue for improvement and extension of water works.

Methuen, Mass.—Citizens have voted to extend water pipes at total cost of \$26,950.

Marquette, Mich.—Hering & Fuller, New York, will make report on proposed intake extension.

Chisholm, Minn.—Light, Water, Power and Building Commission has instructed Engineer D. W. Mead to call for bids for construction of 300,000-gal. water tower.

Eveleth, Minn.—Consulting Engineer Burch has recommended installing of 16-in. water main, distance 4,000 ft., from pumping station to city.

Cleveland, Miss.—City has selected Xavier A. Kramer, Magnolia, to prepare plans for proposed water works; cost \$20,000.—A. Faries, Mayor.

Collins, Miss.—Board of Aldermen will receive bids for constructing 100,000-gal. reservoir, both on concrete underground and steel overground.

Hazlehurst, Miss.—Board of Aldermen has adopted plans by Graves-Matthews Paving Co., Birmingham, Ala., for construction of steel reinforced concrete reservoir; capacity 250,000 gals. water.—E. M. Cook, Mayor.

Liberty, Mo.—Citizens have voted \$20,000 water works bonds.

Malden, Mo.—City proposes to construct water works and power plant; cost \$30,000; Arthur Roehm & Co., Malden, Engineers.—M. B. Rayburn, City Clerk.

Helena, Mont.—Improvements will be made to water works; cost, about \$540,000; Chas. W. Kelmick, Engineer.—J. A. Mattson, City Clerk.

Townsend, Mont.—Citizens will vote July 6 on bonds for the installation of water works system.

Belgrade, Neb.—Citizens have voted \$18,000 bonds for water works and electric lighting system.

Hardy, Neb.—Engineers Grant & Letton, F. & M. Bldg., Lincoln, Neb., have completed plans for system of water works; cost \$12,000.—J. C. Gavin, City Clerk.

Hohokus, N. J.—Borough has voted adoption of the plan for the installation of water supply system.

Binghamton, N. Y.—Clinton L. Bogert, New York City, is preparing specifications for reservoir to be built on Mount Prospect, at Mygatt st.; cost \$125,000.

Jamestown, N. Y.—Jas. Grover proposes to bring water, distance three miles, into city.

North Tonawanda, N. Y.—Residents of Wurliizer have petitioned Public Works Department for extension of city water mains through Creek road to Rule road.

Schenectady, N. Y.—Resolution has been adopted by Council authorizing Commissioner of Public Works to employ expert engineer at compensation to be named by Board of Estimate and Apportionment upon proposed improvement of water works.

Rugby, N. D.—City is planning to lay 10,000 ft. 6-in. water mains.

Texola, Okla.—City is considering \$10,000 bond issue for construction of water works.

Salem, Ore.—Engineer J. T. Whistler, Chamber of Commerce Bldg., Portland, has recommended Little North Fork of the Santiam River for water supply providing for filtered system of 10,000,000 gals. per day; estimated cost \$1,430,000; two other plans are outlined, one unfiltered system from Breitenbush River, capable of distributing 15,000,000 gals. per day, estimated cost \$1,780,000, and the other filtered system from Willamette River, distributing 10,000,000 gals. per day; estimated cost \$1,245,000.

Vale, Ore.—Bids will be received July 25 for \$45,000 water works bonds.

Clifton Heights, Pa.—Citizens will vote on \$120,000 bonds to construct water works.

McKeesport, Pa.—Water and Lighting Committee has ordered estimate of cost of laying water mains to Versailles Borough.

Pittsburg, Pa.—Mayor Magee has signed ordinance providing for securing of additional land for extension of city filtration plant at Aspinwall.

Reading, Pa.—Water Board may ask consent of Councils to meter all water.

Sunbury, Pa.—City will make water extensions and improvements in near future to cost \$150,000.

Pawtucket, R. I.—Council has passed ordinance for issuing of \$125,000 water works bonds.

Barnwell, S. C.—City is considering election on \$16,000 bonds for construction of water works and electric light plant.

Columbia, S. C.—Council has ordered construction of 9-in. water main on Huger St.; cost \$3,800.

Gettysburg, S. D.—Bids will be received, July 5, for \$18,000 water works bonds.—F. M. Wright, City Auditor.

Aransas Pass, Tex.—Citizens will soon vote on \$25,000 bonds for water works system.—W. H. Vernon, Mayor.

Harlingen, Tex.—Citizens will soon vote on bonds for construction of water works.

Shiner, Tex.—Board of Aldermen has ordered election on \$10,000 bonds for water works and street improvements.

Tacoma, Wash.—Council has adopted ordinances for construction of water mains in districts 551 and 562.

Glasgow, N. S. Can.—W. W. Doane, Halifax, has been selected as Engineer for improvements to water works; cost \$75,000.

CONTRACTS AWARDED

Fort DuPont, Del.—Furnishing and installing materials in pump house at Fort DuPont, to Camden Heating Co., \$6,993.

New Baden, Ill.—Tank and tower to F. J. Koch, city; pipe, about 2,700 ft. 8-in., 1,900 ft. 6-in., and 150 ft. 4-in., to J. A. Hartman, Olney, at 84c., 62c. and 45c. per ft., respectively.

Bristol, Va.—Building water main, length five miles, to R. L. Blevins, Bristol.

BIDS RECEIVED

Jacksonville, Fla.—Building 3,000-gal. reservoir, all bids rejected: James N. Bruin Co., Board's plans \$52,000; F. W. Long & Co., Board's plans \$77,945; company's plans, \$85,945; Lightman & McDowell Co., Board's plans \$55,138; Logan Coal and Supply Co., Board's plans \$69,675; J. D. McGee, Board's plans \$53,900; Bryan & Co., Board's plans \$82,000, company's plans \$81,500; Piedmont Construction Co., Board's plans \$74,950, com-

pany's plans \$72,875; Burwell & Hillyer, Board's plans \$82,000; Edward B. Garrettson, Board's plans \$77,700, company's plans \$75,990; Phillips & Turnbull, Board's plans \$69,891.35, company's plans \$67,950.

LIGHTING AND POWER

Alliceville, Ala.—City is considering construction of electric light plant.

Bessemer, Ala.—Council is considering granting of franchise to the Birmingham Water & Electric Power Co. to furnish electric light and water.

Los Angeles, Cal.—Los Angeles Gas & Electric Co. has prepared plans for 100x73 ft. addition to electric generating plant on S. Alameda st.; cost about \$12,000.

Atlanta, Ga.—Georgia Power Co. has applied to Council for franchise to do business.

Thomasville, Ga.—City will install engine in electric light plant; cost \$3,000.

Crawfordsville, Ind.—Bids will be opened in about three weeks for construction of electric light plant; cost about \$100,000; The Esterlin Co., West Lafayette, Engineers.—J. R. Thomas, Superintendent.

Indianapolis, Ind.—City Engineer Klausmann will submit to Board of Public Works recommendations for placing of about 200 additional electric street lights.

Ft. Dodge, Ia.—Business men are considering matter of street lighting.—C. N. Smith, Chairman General Committee.

Canton, Kan.—Citizens have voted \$30,000 electric light and water works bonds.

Centerville, Md.—Dr. Homer J. Smith has applied to Town Council for franchise to build gas plant.

Elkton, Md.—Citizens will vote July 11 on \$60,000 electric light, sewer and water bonds.—H. Arthur Mitchell, President Commissioners.

Haverhill, Mass.—Question of municipal ownership of Haverhill electric plant will be one of the issues of next municipal election.

Chisholm, Minn.—Village Council is considering installation of municipal light plant.

Mazeppa, Minn.—Village is planning to install large dynamo in electric light plant.

Oxford, Miss.—City will make extension to electric light plant and water works; work includes 1-mile electric line, 3/4-mile 8-in. water main, motor pumps, cable sufficient to pull motor pumps, and 200,000-gal. reservoir.

Atlantic City, N. J.—Plans for permanent illumination scheme on Boardwalk, costing approximately from \$33,000 to \$50,000, according to number of standards selected, have been presented to Council by Chairman Donnelly, of the Lighting Committee.

Audubon, N. J.—Establishment of municipal gas plant is being considered. Address Councilman Ervin, Chairman Lighting Committee.

Sea Isle City, N. J.—Citizens will vote Aug. 16 on \$20,000 bonds for gas plant.

Massena, N. Y.—Aluminum Co. of America has planned to extend power house; cost \$750,000; will let contract soon.

Red Creek, N. Y.—Wolcott Lighting Co. is considering extending lines to Red Creek and Sodus for lighting purposes.

Portsmouth, O.—Fillmore Musser, cashier Ohio Valley Bank, is interested in company which will construct dam near falls of Brush Creek for furnishing of light and power.

Ashland, Ore.—Citizens will vote June 27, change of date, on \$55,000 bonds for electric lights and paving.

Barnwell, S. C.—City is considering election on voting \$16,000 of bonds for construction of electric light plant and water works.

Mexia, Tex.—Company from Cleveland,

Waterbury, Conn.—Bids opened June 7 by Board Public Works for constructing storage reservoir dam: (a) John F. Cogan Co., Brewster, N. Y., \$900,706; (b) S. Pearson & Son, Inc., 507 5th Ave., New York, N. Y., \$773,464; (c) MacArthur Bros. Co., 11 Pine st., New York, N. Y., \$723,957; (d) The O'Brien Const. Co., Van Ness, N. Y., \$659,075; (e) Connors Bros. Co., Lowell, Mass., \$647,274; (f) Richd. E. Henningham, 1 Madison Ave., New York, N. Y., \$641,481; (g) Patrick McGovern, 6 Beacon st., Boston, Mass., \$594,531; (h) Ryan-Unmack Co., 134 Olive st., New Haven, Conn., \$528,436.—R. A. Cairns, City Engineer.

	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
5,000 cu. yds. stripping under embankment.....	\$1.25	\$0.44	\$0.50	\$0.30	\$1.00	\$0.34	\$0.60	\$0.50
1,000 cu. yds. excavation of trenches.....	1.50	1.45	.60	.60	.80	.25	1.00	1.75
400 cu. yds. rock excavation.....	5.00	3.62	3.00	1.00	2.50	2.50	3.00	2.50
25,600 cu. yds. concrete masonry, 1:3:6.....	8.00	7.85	7.75	7.00	5.75	7.44	6.75	6.00
5,000 cu. yds. concrete masonry, 1:3:5.....	9.00	9.00	8.75	7.50	6.00	7.48	7.00	6.00
2,960 cu. yds. concrete blocks.....	12.00	16.44	15.00	10.00	16.00	13.50	12.00	10.00
525,000 cu. yds. rolled embankment.....	1.00	.70	.63	.65	.63	.52	.56	.50
5,900 cu. yds. crushed stone.....	2.00	2.17	2.80	1.50	2.00	1.15	1.00	1.05
8,900 cu. yds. paving.....	5.00	7.73	6.75	4.00	6.00	6.50	2.50	3.25
6,300 cu. yds. barning on dam.....	1.00	1.16	1.30	.75	2.00	.60	1.00	.25
5,000 cu. yds. barning adjacent areas.....	1.00	1.16	1.30	.75	1.00	.60	1.00	.30
650 sq. rods seedling.....	.50	.07	.25	.15	.20	1.65	2.00	.10
18,840 sq. yds. sodding.....	.40	.19	.25	.50	.10	1.00	.40	.15
700 lin. ft. 8-in. tile drain.....	.50	.43	.40	1.00	.75	1.00	.40	1.00
8 catch basins.....	50.00	21.75	10.00	15.00	25.00	20.00	15.00	50.00
Drain gate houses complete, exclusive of foundation.....	5,000.00	4,350.00	2,500.00	3,500.00	2,100.00	3,500.00	3,000.00	3,600.00
Service gate house complete.....	5,000.00	5,030.00	5,500.00	3,500.00	1,900.00	3,500.00	3,000.00	3,900.00
Granolithic flooring.....	1.00	.72	1.80	2.25	2.50	1.00	.50	1.00

O., has applied to Council for franchise to operate light, power and heating plant.

Marcus, Wash.—County Commissioners of Stevens County will grant franchise to the Kettle Falls Light and Power Co. for construction of dam across river; cost \$52,500; power house and machinery plant will cost \$150,000.

Olympia, Wash.—Council has granted new 40-year franchise to Olympia Gas Co.

Petersburg, W. Va.—City is planning construction of electric light plant and water works.

Romney, W. Va.—South Branch Power Co. has been incorporated, \$5,000 capital stock, to construct water power electrical plant on South branch of Potomac River. G. H. Pohnson is interested.

Waterville, Que., Can.—Bids will be asked in about two months for electrical equipment for proposed water power plant; dam will be constructed by day labor; cost about \$35,000.—Fred C. Davis, Coalbrook, Consulting Engineer.

Jamaica, W. I.—H. Von Schon, Wayne County Savings Bank Bldg., Detroit, Mich., has been selected to prepare plans for enlargement of hydroelectric plant of West Indies Electric Co.

CONTRACTS AWARDED

Jacksonville, Fla.—Furnishing 1,500-kw. turbine generator, to Allis-Chalmers Co., Milwaukee, \$26,480; condenser equipment, to C. H. Wheeler Manufacturing Co., \$10,975; motor generator set, to Fort Wayne Electric Works, Fort Wayne, Ind., \$9,610.

South Salem, O.—Lighting streets, Youngstown Consolidated Gas and Electric Co., lowest bidders, 80 lights, \$72 each for 10 years, or \$75 for five years.

BIDS RECEIVED

Los Angeles, Cal.—Furnishing lighting posts on Pico st.; B. F. Kiernuff, \$24,816; Mott Iron Works, \$20,229; Louis R. Bedel, \$21,594; Llewellyn Iron Works, \$15,463; Meyberg Co., \$17,783; Advance Machine Co., \$18,565.

FIRE EQUIPMENT

Van Buren, Ark.—Fire station will be erected.

Los Angeles, Cal.—Chief Eley and Fire Commissioner Hawley have recommended auto apparatus, additional trucks for business district and two new fireboats.

Loyalton, Cal.—R. D. McCreery, electrician for Loyalton Electric Light Co., has submitted proposition to Town Board to install fire alarm system.

Pasadena, Cal.—Purchase of fire engine is being considered. Address Mayor Earley.

Placerville, Cal.—Volunteer Fire Department has asked Board of City Trustees for apparatus.

Stockton, Cal.—Fire Chief Mike McCann has petitioned Council to include item of \$149,277 in its proposed bond issue for new fire apparatus; among estimates are \$45,000 for three new houses, \$35,000 for five fire engines, \$25,000 for five auto hose wagons and \$10,000 for two auto chemical engines.

Salida, Col.—Installation of modern apparatus is being considered.

Bridgeport, Conn.—Mayor E. T. Buckingham has recommended erection of two fire houses and installation of water mains.

Waterbury, Conn.—Bunker Hill Improvement Society is planning to organize fire department.—C. A. Babin, President.

St. Petersburg, Fla.—Citizens will vote July 19 on bonds for fire station.

Morningside, Ill.—City is considering purchase of auto chemical engine.

Quincy, Ill.—City has appropriated \$2,500 for purchase of suction and chemical hose, \$470 for harness, nozzles, etc., \$5,000 for purchase of fire engine.—Geo. L. Schag, Chief.

Sullivan, Ind.—City has sold \$7,500 bonds to equip fire department and erect city building.

Relay, Md.—Volunteer Fire Department will soon award contract for erection of a new engine house and assembly hall; cost about \$3,500; plans by H. J. Tinley, Baltimore.

Lowell, Mass.—Committee of Fire Department has made following recommendations: Purchase of auto chemical and hose wagon for Oakland district and similar apparatus for fire protection in Highlands and Middlesex Village; auto for Chief and \$1,000 appropriation for repairing fire alarm system.

Benton Harbor, Mich.—Funds have been raised for purchase of auto apparatus.—Irving Clauser, Chief.

Dowagiac, Mich.—Fire department has asked for \$800 for purchase of hose and erection of hose drying tower.

Luverne, Mich.—Hook and ladder truck will be purchased.—G. W. Cottrell, Chief.

Negaunee, Mich.—Fire Committee will purchase hook and ladder truck.

Conrad, Mont.—Installation of fire fighting apparatus is being urged.

Almonesson, N. J.—Fire company has decided to purchase apparatus at once.

Roosevelt, N. J.—Council has selected plans for erection of fire station for Company No. 2.

Sea Isle City, N. J.—Citizens will vote Aug. 16 on \$5,000 bonds for fire apparatus.

Toms River, N. J.—Citizens have voted \$1,500 for fire protection.

Niagara Falls, N. Y.—Board of Fire Commissioners and Board of Estimate and Apportionment will take necessary steps to purchase two fire engines.

Palmyra, N. Y.—Village Board has decided to purchase chemical engine.

Saranac Lake, N. Y.—Tentative plans for interior of proposed fire house on Main st. have been completed by Coulter & Westhoff.

Columbus, O.—Bids have been rejected for aerial ladder truck; American-La France Co., Elmira, N. Y., lowest bidder, \$5,240.

Corvallis, Ore.—Citizens will vote July 12 on \$34,000 bonds for fire department equipment.

Portland, Ore.—Ways and Means Committee has ordered purchase of site at Reed and Backstone sts. for erection of home for Engine Co. No. 6.

Hancock, Pa.—City will raise funds for purchase of auto chemical and combination engine.

Stowe, Pa.—Local fire company has purchased site for erection of fire house.

Corpus Christi, Tex.—Wide Awake Hose Co. on South Bluff has decided to purchase combination chemical fire apparatus.

Palbstone, Tex.—City will erect fire station.—James F. Brook, Supervising Architect.

Hillman, Wash.—City will erect fire station.—John Boyle, Chief.

Bridgeport, W. Va.—Fire Department is urging installation of fire alarm system.

Milwaukee, Wis.—Council is considering \$50,000 bond issue for fire department.

Welland, Ont., Can.—Citizens will vote June 27 on \$5,000 bonds for installation of fire alarm system.

Winnipeg, Man., Can.—Fire, Water and Light Committee has recommended purchase of auto chemical engine, also auto for the Chief.—J. E. Buchanan, Chief.

CONTRACTS AWARDED

Leavenworth, Kan.—Building fire station at fort.—J. W. Wright, lowest bidder, \$5,558.

Cincinnati, O.—Knox car chassis for Water Works Department, to S. B. and E. Auto Co., \$2,500.

Erie, Pa.—Rebuilding Manning fire engine, to American-La France Co., Elmira, N. Y., \$1,944.

BIDS RECEIVED

Eveleth, Minn.—Furnishing 2,000 ft. of fire hose: New Jersey Carspring and Rubber Co., \$1, 98c. and 90c.; Chicago Fire Hose Co., Chicago, two kinds, \$1 each a ft.; Diamond Rubber Co., Akron, O., \$1; Mineralized Rubber Co., New York, 80c. and 68c.; Boston Woven Hose Co., Boston, 90c. and 80c.; W. S. Nott Co., Minneapolis, \$1.10, \$1. 90c., \$1.05, \$1; Gutta Percha and Rubber Manufacturing Co., Chicago, 80c.

New York, N. Y.—Para rubber fire hose, 60,000 ft., H. W. Johns-Manville Co., only bidder, 2½-in., \$1.44 per ft., 3-in., \$1.74.

BRIDGES

Huntsville, Ala.—Street Superintendent Murphy has been directed to build concrete bridge on Madison st., across Dry Creek.

Miflin, Ala.—Baldwin County Commissioners, Bay Minette, are considering construction of bridge over Miflin Creek.

Oakland, Cal.—Plans will be prepared for construction of culvert over Temescal Creek.

South Pasadena, Cal.—Citizens have voted \$32,000 bonds to erect concrete bridge over the Arroyo.

Wilmington, Del.—Plans will be prepared by County Engineer for erection of concrete bridge at Roseville.

Tampa, Fla.—County Board has ordered construction of bridge across Turtle Creek.

Harmon, Ill.—Township Highway Commissioners are considering erection of number of concrete bridges.

Illopolis, Ill.—Sangamon County will erect concrete bridge, cost \$6,000, over Sangamon River.

Emden, Me.—This town and Sodon have voted \$10,000 towards erection of \$30,000 bridge over Kennebec River.—E. E. Greenwood, Engineer.

Grand Rapids, Minn.—Alderman Connelly is urging erection of concrete bridge over Grand River at Leonard st.

St. Paul, Minn.—Park Board will expend

\$50,000 this year for bridges and driveways in smaller parks of city.

Natchez, Miss.—Adams County Supervisors and Jefferson County Supervisors, Fayette, are considering construction of bridge across Fairchilds River.

St. Joseph, Mo.—County Court has ordered construction of bridge over creek on proposed Dittmore road.

Omaha, Neb.—Plans will be prepared by City Engineer for viaduct on Nicholas st.

Rochester, N. Y.—City Property and Finance Committee is considering erection of \$160,000 bridge over Genesee River at Central ave.

Bowling Green, O.—Wood County Commissioners are considering construction of a bridge in Bloom Township; cost over \$1,000.

Cincinnati, O.—County Surveyor Clinton Cowen has estimated cost of constructing seven culverts in Delhi Township at \$17,315.

Cincinnati, O.—Service Director Sundmaker has approved revised plans for Gilbert ave. viaduct.

Elyria, O.—Lorain County Commissioners are considering construction of bridge in Huntington Center; cost not to exceed \$1,000.—Charles Chandler, Clerk.

Fremont, O.—Sandusky County has passed resolutions for construction of a concrete bridge in Rice Township and a kreodone block floor system on bridge over Muscalonge Creek on Greensburg pike.

Hamilton, O.—County Commissioners have adopted plans and specifications for sand blasting, cleaning and repainting High street bridge over Miami River; contracts will be let in about 30 days; cost \$4,925.

Youngstown, O.—Council has passed ordinance authorizing Director of Service to expend \$26,000 and to enter into contract for construction of bridge over Andrew's Hollow at Elm st.

Zanesville, O.—County will issue \$200,000 bonds for construction of 5th st. bridge.

Carlisle, Pa.—Construction of bridge at Letort Spring at Middlesex is being considered; county will pay one-third of cost.

Philadelphia, Pa.—Council is considering construction of bridge on line of 84th st. over Darby Creek.

Lead, S. D.—Estimate will be prepared for erection of bridge near settling dam.

CONTRACTS AWARDED

Greencastle, Ind.—Building four small bridges, to O. J. Larkin, R. F. D., Cloverdale, \$2,994.

Maryville, Mo.—Building and repairing 45 bridges, to Standard Bridge Co., Omaha, Neb., \$15,000.

Tilton, N. H.—Construction of Shaker bridge, to Canton Bridge Co.

Jamestown, N. Y.—Concrete bridges, to Mahoney & Svanson, \$50,000.

Defiance, O.—Small bridges, to W. I. Rath & Sons.

Warren, O.—Bridge at Farmington, to N. H. Merwin, Diamond.

Philadelphia, Pa.—Construction of reinforced concrete arch bridge on line of Fox st., to Richard Walsh, \$35,479.

Tacoma, Wash.—Building N. 21st st. reinforced concrete girder bridge, to Creelman, Putnam & Healy, \$49,780.

Tacoma, Wash.—Building Tacoma ave. bridge, to Bartz, Huntington & Whitney, \$10,000.

BIDS RECEIVED

Nashua, N. H.—Reinforced concrete bridge 500 ft. long over Merrimack River, Conners Bros. Co., Lowell, Mass., \$102,100; the Ferro-Concrete Co., Harrisburg, Pa., \$81,000; Owego Concrete Co., Owego, N. Y., \$75,200; Fred F. Ley & Co., Inc., Springfield, Mass., \$74,480.

MISCELLANEOUS

Florence, Ala.—Commissioner's Court of Lauderdale County has ordered built \$18,000 jail to be completed this year.

Montgomery, Ala.—P. L. Penrudocke, Birmingham, has been selected to construct Heenan refuse destroyer; cost \$50,000.

Los Angeles, Cal.—Finance Committee will recommend to Council adoption of a resolution authorizing Board of Public Works to purchase four "squeegee" street washing machines at cost not to exceed \$5,253.30.

Redwood City, Cal.—Council is considering purchase of site for erection of town hall.

Bridgeport, Conn.—Mayor E. T. Buckingham has recommended need of more police stations.

Hartford, Conn.—Street Commissioners will purchase two automobiles at private sale; \$2,600 available.

Pensacola, Fla.—Committee, Alderman Renshaw, Chairman, has been appointed to

formulate more feasible plan for disposition of garbage than now followed.

Pensacola, Fla.—Citizens have defeated proposition to issue \$50,000 bonds for public market house.

Waycross, Ga.—Ware County will vote on \$200,000 bonds for jail, school and road improvements.

Lake Forest, Ill.—Council has passed ordinance for the construction of garbage crematory; cost \$10,000; Sanitary Committee and Board of Health will have matter in charge.

Peoria Heights, Ill.—Village will erect branch jail and justice court near Virginia Beach.

Marion, Ind.—Board of Public Works has decided to construct retaining wall along bank of Mississippi River.

Sullivan, Ind.—City has sold \$7,500 bonds to erect city building and equip fire department.

Kansas City, Kan.—Plans for City Hall, prepared by Ross & Peterson, adopted for City Commissioners; the building to be 4 story, 288 x 150 ft., of Bedford stone and brick, and cost about \$200,000.

Lake Charles, La.—Citizens will vote July 14 on bond issue of \$75,000 for city hall and \$75,000 for three fire stations.—C. H. Burton, City Engineer.

Bliddeford, Me.—Committee on Streets will recommend purchase of street sprinkler.

Waterville, Me.—Council has appropriated \$1,800 for repair of wharfing on Water st.; City Engineer will prepare plans.

Gloucester, Mass.—Council has adopted ordinance providing \$5,000 for extension of almshouse.

Lowell, Mass.—Park Commission will expend about \$500 in purchase of playground apparatus.

New Bedford, Mass.—Bids will be asked at once for erection of municipal garage for Water Works Department.—N. C. Smith, Architect.

St. Joseph, Mo.—Board of Health is considering installation of garbage incinerating plant.

Lincoln, Neb.—City will purchase an automobile this summer for police department.—Roscoe C. Ozman, City Clerk.

Elizabeth, N. J.—Council is considering \$10,000 appropriation for erection of shed over recreation pier.

Hoboken, N. J.—Police Board has asked Council to purchase auto patrol.

Hohokus, N. J.—Council has authorized purchase of road sweepers; cost \$500.

New Brunswick, N. J.—Wm. H. Boylan, architect, will prepare plans for erection of addition to offices of County Clerk.

Cohoes, N. Y.—Council has approved \$7,500 appropriation for the improvement of dike between Cohoes and Green Island.

Poughkeepsie, N. Y.—Mayor John K. Sague favors procuring of municipal dock.

Columbus, O.—Council has appropriated \$7,000 for purchase of site at Waldeck and Iuka ave. for public park.

Columbus, O.—Council has approved or-

inance ordering \$15,000 bond issue for construction of residence, shelter house and comfort station in Goodale Park.

Dayton, O.—Service Director Ely is considering numerous smoke consumer devices proposed for water works pumping station.

Hamilton, O.—Citizens will vote, June 25, on \$260,000 bonds for various public improvements.

Oklahoma City, Okla.—City is planning to erect permanent detention hospital.—Bob Parham, City Clerk.

Ogden, Utah.—Forty-one local restaurants and eating houses must purchase metallic garbage cans at once or be prosecuted under State Pure Food law.—Fred C. Naisbitt, Local State Deputy to Food and Dairy Commissioner.

Richmond, Va.—Bids received June 7 for constructing pile bulkhead wharf along east shore of James River, and for deepening river bed alongside wharf to channel, have been rejected; new bids are to be asked later.—C. E. Bolling, City Engineer.

North Yakima, Wash.—Plans will be prepared for erection of three-story, \$40,000 city hall.

Tacoma, Wash.—Citizens have voted \$10,000 bonds for park at Fort Defiance; other appropriations defeated.

Tacoma, Wash.—Council has passed ordinance for purchase of gasoline runabout for Water Department.

Fond du Lac, Wis.—County Board will expend \$40,000 in improvements to asylum.

Milwaukee, Wis.—Park Board has asked for \$10,000 appropriation for erection of bath houses in Gordon Park.

Milwaukee, Wis.—Council is considering \$50,000 bond issue for library in Fourteenth Ward.

Wausau, Wis.—Procurement of public park is being considered.

Winnipeg, Man.—Council has decided to call for competitive plans for new city hall to cost approximately \$2,000,000.

CONTRACTS AWARDED

Hutchinson, Kan.—Street sprinkling, six months, to M. M. Booker, 9c. per lin. ft.

Eveleth, Minn.—Hauling garbage from newly acquired district, to W. P. Vietch, \$175 per month.

Columbus Barracks, O.—Constructing crematory building and construction and erection of garbage crematory at post, to Dixon Engineering and Construction Co., No. 47 The Colonnade, Toledo, \$3,740, using 100-ft. steel chimney.

Philadelphia, Pa.—Completing city hall, John R. Wriggins & Co., lowest bidder, \$214,000.

Shamokin, Pa.—Building city hall, to East End Lumber Co., \$6,200.

Phoenix, Va.—Furnishing summer uniforms for police, to John Storm, W. Queen st., Newport News, \$19.75 per uniform.

Vancouver, B. C., Can.—Refuse and garbage destructor, to Public Works Engineering Co., Beck Bldg., Portland, Ore., about \$72,500.

BIDS RECEIVED

Los Angeles, Cal.—Following are bids opened by the Board of Supervisors for erecting a steel frame brick and terra cotta, 300 x 54 ft., historical and art museum bldg. at Agricultural Park: General contract, J. E. Atkinson, Byrne Bldg., \$219,777; F. O. Engstrom Co., \$223,750; National Fire Proofing Co., \$224,633; Alta Planing Mill Co., \$225,748; J. V. McNeil, \$227,885; Richards Neustadt Co., \$237,026; Plumbing, Eugene Murray, \$3,088; Howe Bros., \$3,152; A. W. McGahan, \$3,171; H. J. Crawford, \$3,205; P. M. Parker, \$3,330; Guercio Bros., \$3,583; Blumne & Jay, \$3,797; Richards Neustadt Co., \$4,032; Lohman Bros., \$4,500; Electric work, Richards Neustadt Co., \$3,126; So. Cal. Elect. Co., \$4,935; Central Elect. Co., \$5,650; Woodhill-Hulse Co., \$6,440; F. O. Engstrom Co., \$6,487; Hudson & Munsell, Archt., Stimson Bldg.

Bridgeport, Conn.—Reduction of garbage: American Extractor Corporation, two bids, \$7,500 and \$8,000 per annum for a period of 10 years; Chas. C. Fischer, York, Pa., \$1 a ton for 10 years; C. Lewis Bil, two bids, 90c. and \$1.15 per ton; A. S. Hamilton, \$1.20 a ton for 10 years.

Plymouth, Mass.—Riprap stone in dike on Long Beach, Plymouth Harbor, Thos. Fitzgibbons, Beverly, \$2.94 per ton of 2,000 lbs.; Lawler Bros., 16 City Square, Charlestown, \$3.44; Rowe Bros. Co., Richmond, Me., \$3.97; the Breakwater Co., 1222 Arcade Bldg., Philadelphia, Pa., \$2.43; \$18,000 available.

Minneapolis, Minn.—Furnishing auto: Medrick Perry, Overland automobile runabout, 1907 model, with equipment, second hand, \$500; Dr. H. A. Cohen, Ford roadster, 1908 model, with equipment, second hand, \$550; Maxwell-Brisco Co., Maxwell model AA runabout, with equipment, \$700; Electric Vehicle Co., one Hupmobile with equipment, \$742.50; Northwestern Automobile Co., Ford model T 1909 roadster, \$750; Studebaker Bros. Co., Flanders "20" with equipment, \$780.

Elizabeth, N. J.—City scavenger work: Wade Bros., \$34,000; Thomas Viscount, \$42,000; Louis Rusciano, \$43,025; Nicola La Corte, \$53,597.

Irvington, N. J.—Public scavenger service, five years, Chas. Wahlers, \$19,275; Geo. Scott, \$30,000; Chas. Solda, \$39,000; L. J. Buckley & Co., \$19,723; Michael O'Connor, Irvington, \$15,000.

Toledo, O.—Disposal of city's garbage, Fred C. Alber, \$5,875 per year; N. Rassel & Sons Co., Toledo, \$9,425; Toledo Fertilizer Co., Toledo, \$11,800.—Fred Shane, Secretary Board of Control.

Vancouver, B. C., Can.—Construction of the new incinerator to be built near the end of the Cambie st. bridge: Public Works Engineering Co., Portland, Ore., four bids on different types, ranging from \$63,000 to about \$70,000; Dundon Excelsior Furnace Co., \$69,000; Heenan & Froude, incinerator with front feed, \$54,968; with back feed, \$46,131; Dixon Engineering Co., \$49,500; J. W. McFarlane, \$82,357.

TOO LATE FOR CLASSIFICATION

STREET IMPROVEMENTS

San Francisco, Cal.—Board of Works has approved plans for Beale st. grade and cut.

Denver, Col.—State Highway Commission has plans for extension of road at north end of West Colfax viaduct to connect with the Golden road now being constructed.

Washington, D. C.—Senate has passed bill for extension of Massachusetts ave.; cost \$6,000.

Indianapolis, Ind.—Board of Public Works has adopted resolutions for improvement of 29th st. and Meridian st. with wooden block asphalt, bituminous concrete or brick roadway.

Independence, Kan.—County Court has decided to pave Electric st. from city limits westward to Northern blvd.; Mayor Llewellyn Jones has urged Council to improve same street from western city limits eastward to Pacific Station.

Leavenworth, Kan.—Council is considering paving of Columbia ave. and Marshall st. and regrading and paving of Third ave.

Monroe, Mich.—Citizens have voted \$15,000 bonds for street paving purposes.

Bemidji, Minn.—Citizens have voted \$12,000 bonds for street improvements.

Elizabeth, N. J.—Council has decided to ask for bids for paving Madison ave. with brick pavement.

Roosevelt, N. J.—Paving of portion of Woodbridge ave. with brick is being urged.

Woodstown, N. J.—Borough officials are urging farmers of Pilesgrove Township to take up matter of another State road in borough.

Ilion, N. Y.—Extension of paving on

West st. is being considered by Board of Street Commissioners.

Akron, O.—Council has passed ordinance carrying \$7,000 for improvement of Goodale ave. and \$2,770 for street improvements.

Youngstown, O.—Council is considering paving of McKinnie, Superior and Jefferson sts.

Youngstown, O.—Council has ordered issuance of \$7,500 bonds for opening two avenues.

Duncan, Okla.—Stephens County will vote on \$25,000 bonds for county roads.

Henryetta, Okla.—Bids will be asked for construction of four miles of concrete sidewalks.

Lexington, Va.—Citizens have voted \$30,000 bonds for streets and roads.

Bluefield, W. Va.—Board of Affairs has ordered bids advertised for construction of east end road.

CONTRACTS AWARDED

Hartford, Conn.—Street improvements: Town of Meriden, 5,738 ft. of macadam to C. W. Tryon Co., City, \$1.49 per lin. ft.; town of Ledyard, to Eldridge Construction Co., Mystic, \$7,444 for 5,150 ft. of gravel on River road; town of Coventry, 10,000 lin. ft. of gravel, to Ahern Bros., Norwich, \$1.35 per ft.; town of Salem, 5,130 ft. of gravel, to Roger Barnes, New London, \$1.49 per ft.; town of Colchester, two sections of gravel, 3,753 ft. to Ahern Bros., Norwich, \$1.25 per ft., and 2,000 ft. gravel, to Roger Barnes, \$1.49 per ft.; town of Killingworth, 11,485 ft. of graded road, to B. D. Pierce, Jr., Co., Bridgeport, \$15,900; town of Clin-

ton, 16,016 lin. ft. of graded, to Joseph D'Aloia, West Somerville, Mass., \$14,291.

Creston, Ia.—Laying 2,200 sq. ft. of 4-in. cement walk, at 11½c., to Wm. Rutledge & Co., city.

Duluth, Minn.—Building steel plant road, to Ward & Cole, Superior, \$11,737.

Hastings, Neb.—Brick block paving, 2d st., H. C. Gardner, Lincoln, paving complete, including excavating, \$2.14 per sq. yd.; concrete curb, 34½c. per lin. ft.; resetting old curb, 10c. per lin. ft.; extra sand, \$1.20 per cu. yd.; extra broken stone, \$3.75 per cu. yd.; extra grading, 39c. per cu. yd.; extra concrete, \$7.75 per cu. yd.; E. R. Bing, for M. Ford, Omaha, paving complete, Buffalo or Purington brick, \$2.14 per sq. yd.; paving complete, Phoenix brick, \$1.94; concrete curb, 38c. per lin. ft.; resetting old curb, 9½c. per lin. ft.; extra grading, 34c. per cu. yd.; extra concrete, \$6.40 per cu. yd.; extra sand, \$1.30 per cu. yd.; extra broken stone, \$3.25 per cu. yd.

Freehold, N. J.—Rebuilding two streets with macadam, to Price & Hofeman, Red Bank, \$9,641.

Woodbury, N. J.—Road between this city and Clarksboro with Filbertine, to Filbert Paving and Construction Co., \$59,764.42; road from Swedesboro to Auburn, to same firm, \$44,105.10.

Utica, N. Y.—Oiling State roads in Westmoreland, New Hartford, Rome, Marcy, Deerfield, Floyd, Kirkland and Vernon, to H. M. Roberts Contracting Co.; 34,000 gals. will be purchased from Indian Refining Co., 4½c. per gal. and 82,000 gals. from Standard Oil Co., 4½c. per gal.

Utica, N. Y.—Road oil, 8,000 gals., Stand-

(Continued on page 925)

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
STREET IMPROVEMENTS				
Connecticut	Hartford	June 24, 2 p.m.	Bldg. 1 sect. macadam road in 3 towns; gravel road in Seymour and gravel or macadam, 2 sects., in Ellington.	Jas. H. Macdonald, State Hwy. Com.
Minnesota	Albert Lea	June 24, 5 p.m.	Paving several alleys, 4,015 sq. yds. creos. wood block, brick sandstone and min. rubber; 3,440 ft. protection curb; 1,763 cu. yds. excav. Wm. Barneck, City Engineer.	C. J. Dudley, City Clerk. Fred A. Keppel, City Clerk. M. A. King, Boro. Secretary. C. J. Sanzenbacher, County Auditor. A. W. Barnes, City Engineer. G. Stinchfield, City Engineer. R. J. Cunningham, County Cont'ler. A. F. Keeney, Pres. Bd. Loc. Imp. F. G. Ward, Comr. Pub. Wks.
Ohio	Wapakoneta	June 24	Paving, various materials; cost, \$21,574. Leo Champe, C. E.	B. J. Mullaney, Comr. Pub. Wks. Herald Stevens, Street Commissioner W. H. McMillin, Clk. Bd. Pub. Serv.
Pennsylvania	Mt. Pleasant	June 24, 8 p.m.	Grading, paving and curbing two streets, 6,633 sq. yds.	Chas. R. Kennedy, City Comptroller. F. B. Barrick, Clk. Bd. Pub. Serv. J. M. Gordon, Turnpike Comr. H. A. Simon, Pres. Co. Road. Wm. Worley, Chm. Com'r Sts. and Sidewalks.
Ohio	Toledo	June 24, 10 a.m.	Repairing 2 macadam roads.	I. N. Minor, Clk. Bd. Supervisors. S. O. Hurstad, Town Clk., Christiania D. R. Walkinshaw, Boro. Engineer. Capt. E. R. Tilton, Constr. Q. M. Gustav P. Lee, Town Clerk, Moland. Edward Harter, City Clerk. City Clerk. Benjamin Havens, City Clerk. W. L. Craft, City Clerk. G. W. Craig, City Engineer.
Nebraska	Havelock	June 24	Bldg. 50 cement crossings and 8,000 ft. cement sidewalks.	James J. Withrow, City Clerk.
Indiana	Valparaiso	June 24	Building cement sidewalks; cost, \$5,000.	Geo. Anderson, City Clerk. J. A. Berner, Second st., Sec'y Coun'l L. M. Stallard, Highway Engr. J. H. Rathfon, City Comptroller.
Pennsylvania	Pittsburg	June 24, noon	Improving 2 public roads, 1-1-2 and 2-1-4 miles long.	Geo. Anderson, City Clerk. B. T. Fendall, City Engineer. C. W. Kelly, City Engineer. H. L. Bowlby, Sec'y St. Hwy. Bd.
Illinois	Chicago	June 24, 11 a.m.	Bldg. cinder sidewalks in various sts.	Hugh K. Lindsay, County Engr. Wm. Steiner, City Engineer. W. T. Richards, County Auditor. Chas. H. Troy, County Auditor. Jacob Prevet, City Clerk. M. F. Leonard, County Surveyor. Village Clerk. Otto C. Bastian, Chm. Bd. Pub. Wks. H. G. McMillan, Chm. Bd. Pub. Wks. J. C. Kirby, Mayor. H. A. McSpadden, Town Clerk. F. S. Wingate, Mayor. H. E. Dubell, Dir. Freeholders, Mt. Holly.
New York	Buffalo	June 24, 11 a.m.	Bldg. and repairing all concrete sidewalks to Dec. 31.	Wm. H. Nichols, County Auditor. L. M. Johnson, City Clerk. John T. Scott, County Auditor.
Illinois	Chicago	June 25, 11 a.m.	Furn. at ward yards of Street Bureau 2,500 cu. yds. roofing gravel for top dressing of granite pavements.	D. V. Moffett, County Auditor. J. F. Barlow, County Auditor. T. L. Thomas, County Auditor. M. G. Haun, County Auditor. Board Comrs., Gibson County. A. Y. Stout, County Auditor. J. M. Stone, County Auditor. J. T. Scott, Auditor. B. B. Huntley, Village Clerk. Mel Gordon, City Clerk. J. P. Foresman, Auditor. Jos. E. Davis, County Auditor. Geo. W. Cann, County Auditor. J. H. McConnell, County Auditor. Harry Stinson, County Auditor. A. I. Smith, County Engineer. Fred Drehs, Clk. County Comrs. County Clerk.
Vermont	Burlington	June 25, 2 p.m.	Bldg. cement walks, stone or cement curbing.	S. L. Cluett, Sec'y Pub. Imp. Com. J. W. Sharp, Dir. Co. Freeholders. Frank C. Shank, County Auditor. G. A. Lampher, City Engineer. Wallace Oughitree, Dir. Freeholders.
Ohio	Youngstown	June 25, noon	Grade, curb, pave, etc., four jobs.	Morgan R. Butler, City Engineer. Constructing Q. M.
Louisiana	New Orleans	June 25	Paving 2 and repairing 2 streets with Pitch Lake asphalt; also wood block, Morgan boulevard; subsurface drains, culverts, curbs, sidewalks, 4 streets.	J. W. Layne, Sec'y Bd. Pub. Wks. B. C. Gowan, City Engineer. Fred Drehs, Clk. B. I. Co. Comrs. Harry Stinson, County Auditor.
Ohio	Van Wert	June 25, noon	Draining, curbing and paving Washington st.	
Ohio	Belmont	June 25, noon	Grading, paving and curbing 1-1-4 miles of road.	
Ohio	Niles	June 25, noon	Building 3 miles of roads.	
Utah	Logan City	June 25, 4 p.m.	Paving in Dist. No. 17, five feet wide.	
South Dakota	Wheeler	June 26, noon	Grading highway through sloughs of Moore township.	
Minnesota	Jackson	June 27, 1 p.m.	Bldg. grade over slough along Ditch No. 7.	
Pennsylvania	Greensburg	June 27, 8 p.m.	Grading, paving, curbing, etc., sundry streets.	
Virginia	Ft. Monroe	June 27	Macadam roads, brick gutters, concrete walks, etc.	
Minnesota	Glyndon	June 27	Building 3 miles of road.	
Nebraska	Norfolk	June 27, 5 p.m.	Brick block paving, 23,286 sq. yds., Dist. No. 1.	
Iowa	Albia	June 27, 2 p.m.	Paving sts.; Hall and Adams, Centerville, Engrs.	
Indiana	Kokomo	June 27, 10 a.m.	Curbing and laying sidewalks on Taylor st.	
Virginia	Roanoke	June 27, noon	Building granolithic sidewalks, two jobs.	
Nebraska	Omaha	June 27, 2 p.m.	Grading two streets.	
Wyoming	Sheridan	June 27, 8 p.m.	Creo. wood block or brick paving, 69,064 sq. yds.; excav., 23,000 cu. yds.; concrete base, 11,511 cu. yds.; concrete header blocks, 2,400 lin. ft.; storm sewer system.	
Washington	Port Townsend	June 28, 8 p.m.	Brick pavement, 5,780 sq. yds.; concrete sidewalks, 10,740 sq. ft. curb and gutters, 9,052 lin. ft.; concrete for retaining walls, 3,800 cu. yds.	
Pennsylvania	Pottsville	June 28, 7:30 p.m.	Grading, curbing, and paving two sts.; "See Proposals"	
Missouri	St. Joseph	June 28	Grading 4 roads, Contracts Nos. 153, 4, 5 and 6.	
Virginia	Lancaster	June 28	Macadamizing a portion of College ave.	
Washington	Tacoma	June 28	Brick paving, 5,780 sq. yds.; concrete sidewalks, 10,700 sq. yds.; curb and gutter, 9,052 lin. ft.; excav., 12,650 cu. yds.; fill, 21,700 cu. yds.; concrete for retaining wall, 3,800 cu. yds.	
Maryland	Baltimore	June 29, 11 a.m.	Pave, any suitable material, curb, etc., Laurens street.	
Connecticut	New Haven	June 29, 10 a.m.	Macadam paving, 2 aves.; granitoid and Hassam, Commerce st.	
Washington	Olympia	June 29	Macadamizing State Aid roads Nos. 60 and 14-58.	
Ohio	Columbus	June 29, noon	Imp. limestone and draining 13,796 lin. ft. Westerville road Linden, also Jackson Pike.	
Iowa	Marshalltown	June 29	Paving 4 miles of road, 2-3 of concrete, remainder brick block.	
Indiana	Anderson	June 30, 10 a.m.	Bldg. gravel road in line bet. Delaware and Madison counties.	
Indiana	Greenfield	June 30, 10 a.m.	Bldg. 13,480 ft. gravel road bet. Madison and Hancock counties.	
Indiana	Brazil	June 30, 7:30 p.m.	Building cement sidewalks on National ave.	
Ohio	Gallipolis	July 1	Grading and draining 14 miles of pike road.	
Illinois	Colona	July 1	Bldg. 1,350 ft. concrete sidewalk.	
Indiana	South Bend	July 1, 10 a.m.	Bldg. cement walks and curb on Canby street.	
Utah	Salt Lake City	July 1, 8 p.m.	Repairing all pavements ordered to Dec. 31.	
Texas	Rotan	July 1, 10 a.m.	Grading and graveling about 26,756 sq. yds.	
Alabama	Ft. Payne	July 1, 2 p.m.	Bldg. certain cement sidewalks.	
Maine	Hallowell	July 2, 2 p.m.	Bldg. 550 ft. state road in city.	
New Jersey	Burlington	July 3, 11 a.m.	Bldg. gravel road, 4.26 miles south from Gardner's Corner.	
Indiana	Danville	July 5, 10 a.m.	Bldg. John P. Street gravel road, 7,893 ft. long, Union twp.	
Indiana	Newcastle	July 5, 7 p.m.	Grading, paving and curbing portions of 3 streets.	
Indiana	Vincennes	July 5, 2 p.m.	Bldg. 5,736 ft., also 6,400 ft. gravel road.	
Indiana	Greencastle	July 5, 2 p.m.	Bldg. gravel road, 11,733 ft. long; 3 macadam roads, 11,252; 7,324 and 1,121 ft. long.	
Indiana	Tipton	July 5, 10 a.m.	Bldg. gravel road, 5,262 ft., rock road, 10,535 ft. long.	
Indiana	Vernon	July 5, 11 a.m.	Bldg. 25.6 miles road in Campbell township.	
Indiana	Delphi	July 5, noon	Improving highways in Deer Creek and Jackson twps.	
Indiana	Princeton	July 5, noon	Bldg. 5 rock roads: 16.5, 3.75, 2.5, 6.5 and 2.4 miles long.	
Indiana	Marion	July 5, 2 p.m.	Bldg. road in Fairmont township.	
Indiana	Rushville	July 5, 2 p.m.	Bldg. Chester George macadam road, Noble township.	
Indiana	Vincennes	July 5, 2 p.m.	Bldg. 2,700 ft. gravel road.	
Illinois	Port Byron	July 5, 7 p.m.	Bldg. 1,750 lin. ft. 4-ft. cement sidewalk.	
Nebraska	Seward	July 6	Brick block paving; Consolidated Eng. Co., Bee Bldg., Omaha.	
Indiana	Lafayette	July 6, 10 a.m.	Bldg. gravel road.	
Indiana	Muncie	July 6, 10 a.m.	Bldg. Smith crushed stone road, Center township.	
Indiana	Logansport	July 6, 2 p.m.	Bldg. 26,000 ft. A. O. Brandt macadam road on township line.	
Ohio	Canton	July 6, 10 a.m.	Brick paving, grading, draining 1 mile road, Lexington twp.	
Indiana	Evansville	July 7, 10 a.m.	Furnishing road roller.	
Indiana	Anderson	July 7	Bldg. 3 gravel and 1 asphalt road with asphalt binder.	
Ohio	Cincinnati	July 8	Widening road on Harris ave., Mt. Wash., Anderson twp.	
California	Quincy	July 8	Bldg. road.	
New York	Hoosick Falls	July 8, 8 p.m.	Brick paving, 900 sq. yds.; bit. macadam, 2,700 sq. yds.; concrete sidewalks, 68,200 sq. ft.; driveways, 5,600 sq. ft.; concrete curb and gutter, 4,660 lin. ft.; relay 7,500 sq. ft. flag walk. W. Thomas Wooley, Village Engineer.	
New Jersey	Flemington	July 8, 11 a.m.	Building macadam road 17,802 ft. long.	
Ohio	Findlay	July 9	Bldg. 5 miles stone pike in Delaware County.	
Indiana	Anderson	July 11	Bldg. 4,346 sq. ft. cement walk, 1,000 lin. ft. curb and gutter.	
New Jersey	Newark	July 11, 3 p.m.	Bit. Telford paving, grading, etc., 4 miles Pleasant Valley Way, from Verona to West Orange.	
Wisconsin	Waukesha	July 11	Tar macadam paving, 31,139 sq. yds.; brick on concrete, 5,770 sq. yds.; comb. concrete curb and gutter, 21,435 lin. ft.; excavation, 15,450 cu. yds., 5 streets and avenues.	
New York	Ft. Slocum	July 12, 11 a.m.	Building roads, walks, curbs, gutters and drains.	
Florida	Lake City	July 12, 7:30 p.m.	Brick paving, laid flat, 16,000 sq. yds.; cement walks, 5 miles; cement or 2x6 heart pine curbing.	
Wisconsin	Wausau	July 15	Creo. block paving, 8,000 sq. yds.	
Ohio	Cincinnati	July 15, noon	Improving two roads.	
Indiana	Evansville	July 18, 10 a.m.	Improving and resurfacing Fourth and Division Streets.	
SEWERAGE				
Wisconsin	Kenosha	June 24	Furn. material and laying 5,980 ft. 24 to 10-in. pipe sewers.	M. J. Scholey, Chm. St. Ass. Com. M. E. Guslin, Village Clerk. W. L. Craft, City Engineers.
Ohio	Lebanon	June 24, noon	Bldg. 6,900 ft. 8 and 10-in. pipe sewers.	A. P. Perley, Clk. Bd. Pub. Wks. C. W. Kelly, City Engineer.
Virginia	Roanoke	June 24, noon	Building sewers in two streets.	A. C. Schrader, Pres. Bd. Pub. Wks. W. H. McMillin, Clk. Div. Pub. Serv.
Indiana	South Bend	June 24, 10 a.m.	Bldg. overflow pipe sewer in East Wayne st.	
Connecticut	New Haven	June 24, 2 p.m.	Bldg. sewers in Scranton and Munson sts.	
Indiana	Indianapolis	June 24, 10 a.m.	Bldg. \$2,750 sewer in alley east of Linden street.	
Ohio	Youngstown	June 25, noon	Bldg. sewers in portions of 2 streets.	

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
SEWERAGE (Continued)				
Georgia	Savannah	June 25	Building rein. concrete drain in De Renne Canal and outlet	G. Reuben Butler, County Clerk.
Wyoming	Sheridan	June 27, 8 p.m.	Bldg. storm water sewer system, paving, curb, etc.	James J. Withrow, City Clerk.
Oklahoma	Apache	June 27	Furn. material, etc., for sewer and water system, etc.	Town Clerk.
South Dakota	Vermilion	June 27, 8 p.m.	Building sewers in Pine and Yale streets.	C. I. Vaughn, City Auditor.
Indiana	Evansville	June 27	Building 770 ft. sewer in Governor street.	Board of Public Works.
Pennsylvania	Wescosville	June 27, 10 a.m.	Bldg. sewerage system; about 3,000 ft. 6, 8 and 10-in. vit. pipe, pump house, disposal plant, etc.; R. S. Rathbun, Engineer.	Board of County Commissioners.
New York	New York	June 27, 2 p.m.	Bldg. sewers, etc., also alterations, basins, etc., various streets.	Geo. McAneny, Boro. President.
Connecticut	Hartford	June 27, 11 a.m.	Bldg. 6,000 ft. 54 to 84-in. concrete sewer, E. Side Interceptor.	J. Butts, Sec'y Bd. Con. and Supply.
Iowa	Knoxville	June 27, 2 p.m.	Bldg. sanitary sewers, Hall & Adams, Centerville, Engrs.	City Clerk.
Ohio	Jeffersonville	June 27, noon	Constructing sewers.	T. B. Miller, City Clerk.
Maine	Randolph	June 27, 7:30 p.m.	Bldg. tile sewer in Water street.	C. E. Clark, Chm. Bd. Selectmen.
Texas	Amarillo	June 28, 10 a.m.	Bldg. sanitary sewers: 11,100 ft. 15-in., 8,155 ft. 12-in., 30,835 ft. 6-in. pipe. E. L. Dalton, Dallas, Engr.	City Secretary.
Indiana	Kendallville	June 28, 6 p.m.	Constructing sewers.	Wm. P. Myers, City Clerk.
Pennsylvania	Lancaster	June 28	Bldg. brick and concrete sewers, etc. See Proposals, June 15.	St. Com., care of City Controller.
Kansas	Burlington	June 28	Bldg. sanitary sewers, including disposal works.	Burns & McDonnell, K. C., Engrs.
Tennessee	La Follette	June 29	Bldg. sewer and drain from Aspen st. to river.	J. Wm. Taylor, Chm. Bd. Pub. Wks.
Wisconsin	West Salem	June 30	Furn. material and laying 5,770 ft. 6, 8 and 10-in. sewers, 300 ft. 14 in. and 680 ft. 4-in. water main.	S. W. Brown, Village Clerk.
Maine	Portland	July 1, noon	Bldg. Sec. 2, Morrills Corner sewer.	Bion Bradbury, Jr., Com'r.
Pennsylvania	West View	July 1	Bldg. sewer system and disposal plant; Trimble & Moller, Engineers, 435 Fourth ave., Pittsburg.	H. L. Donaldson.
Ohio	Jefferson	July 1	Constructing sewers.	F. M. Miller, Village Clerk.
Indiana	South Bend	July 1, 10 a.m.	Bldg. pipe sewer in Milton ave., house connections, etc.	O. C. Bastian, Chm. Bd. Pub. Wks.
Florida	Jacksonville	July 5, 3 p.m.	Furn. and lay 820 ft. 10-in. and 410 ft. t. c., 6,091 ft. 8-in. t. c. sewer, etc.; also 800 ft. 30-in. 3,430 ft. 24-in. circular brick drains, manholes, etc.; R. N. Ellis, C.E.	W. M. Bostwick, Jr., Chm. W.W. Tr's
New Jersey	Plainfield	July 5, 1 p.m.	Bldg. storm sewer: 375 ft. 24-in., 265 ft. 30-in., 400 ft. 12 and 15-in. vit. pipe; 2 manholes, 12 inlets, etc.	Andrew J. Gavett, City Surveyor.
Oklahoma	Hugo	July 5, 8 p.m.	Bldg. complete sanitary sewer system and disposal plants.	H. C. Blanchard, City Engineer.
Iowa	Pella	July 6, 8 p.m.	Bldg. 6 miles 8-15-in. pipe sewer; also disposal plant.	A. C. Kuyper, City Clerk.
Ohio	Struthers	July 6, noon	Bldg. sanitary and storm sewers in Short and Elm streets.	L. S. Creek, Village Clerk.
Wisconsin	Appleton	July 6, 4 p.m.	Bldg. sewers in various streets.	E. L. Williams, City Clerk.
Minnesota	Tracy	July 7, 8 p.m.	Bldg. portion of sewer system.	C. C. Richard, Mayor.
Massachusetts	Ft. Warren	July 7, 10 a.m.	Changes and extension of sewer system.	Capt. A. M. Miller, Constr. Q. M.
Michigan	Munising	July 7	Bldg. 6,854 ft. 8 to 24-in. vit. pipe, 1,985 ft. 2.5 x 3 ft. and 3 x 3.5 ft. concrete sewers, 19 catch basins, 2 bulkheads, etc.	James Tracy, City Clerk.
Massachusetts	Boston	July 9, 11 a.m.	Bldg. drain at navy yard.	Com. Officer, Navy Yard.
Missouri	Missoula	July 11, 5 p.m.	Building sanitary sewer system; see "Proposals," June 22.	C. W. Swearingen, City Engineer.
South Carolina	Charleston	July 11, noon	Bldg. sewage receiving tank, pump pit, etc., including vert. centrifugal pumps, elec. motors, control devices.	J. H. Dingle, City Engineer.
Kansas	Sabetha	July 12	Bldg. sanitary sewers, including 2 separate disposal works.	Burns & McDonnell, K. C., Engrs.
WATER SUPPLY				
Florida	Jacksonville	June 24, 3 p.m.	Bldg. 3,000,000-gal. rein. concrete reser voir.	W. M. Bostwick, Chm. Wtr. Wks. Trus.
Wisconsin	West Allis	June 25, noon	Furn. and lay 17,000 ft. 6-in. c.-i. main, and 47 fire hydrants, etc.	F. Phillips, Jr., Chm. Bd. Pub. Wks.
Dist. of Columbia	Washington	June 27, 2 p.m.	Furnishing 3,000 water meters.	C. H. Rudolph, Chm. Bd. Ccmrs.
Kansas	Stafford	June 27, 8 p.m.	Building water works system; bids recalled, will open later.	J. R. Mullen, Mayor.
Pennsylvania	Wescosville	June 27, 10 a.m.	Bldg. rein. concrete stone pipe, 24x30 ft., conduit, intake, basins, etc.	Lehigh County Comrs., Allentown.
Oklahoma	Apache	June 27	Furn. mat. and mach. for water, elec. light and sewer plants.	Town Clerk.
Brit. Col'bia	New Westminster	June 27	Laying and jointing 14 miles 25-in. steel riveted pipe and 8,000 ft. 12 and 13-in. lap-welded steel pipe, inc. hauling, fixing all valves, etc.; bldg. bridges and culverts, etc.	J. W. B. Blackman, City Engineer.
New Jersey	Atlantic City	June 28, 2:30 p.m.	Erecting pumping station at Absecon.	L. Van Gilder, Superintendent.
Minnesota	Ellensdale	June 28, 8 p.m.	Drilling deep wells.	C. R. Torgenson, Village Recorder.
New York	New York	June 29, 2 p.m.	Furn. various water works supplies.	H. S. Thompson, Com'r Water Supply, Gas and Electricity.
Oklahoma	Cherokee	June 30, 3 p.m.	Extending water system; see Proposal adv., June 15th issue.	J. W. Rackley, City Clerk.
Kansas	Ft. Leavenworth	June 30, 10:30 a.m.	Furn. 85 tons soil pipe and fittings; 1,600 brass cocks, 795 non-synphoning basin traps and 10,000 ft. wrought iron pipe, etc. Trench lay, back fill for 3,100 ft., 18-in. water lines.	Maj. T. H. Slavens, Com. Q. M.
New York	Olean	July 1, 8 p.m.	Equipping filter bed.	Chas. Keenan, Sec'y Water Board.
Illinois	Moline	July 1	Furn. 3,450 ft. 4-in. c.-i. water pipe and other supplies.	Village Recorder.
Montana	Plainview	July 1	Boring 10-in. artesian well for County and town.	J. J. Porter, Chm. Water Com.
Virginia	Louisa	July 2	Bldg. a lake, inc. 8,000 ft. 48-in. continuous wood-stave pipe, 8,000 ft. concrete-lined canal; hydraulic fill or earth dam, 265,000 cu. yds.; outlet tunnel, 600 ft. long; outlet canal, 3,000 ft. long; spillway diversion dam, valves, valve chambers, etc.	Thos. W. Jaycox, C.E., 1608 Bwy.
Colorado	Denver	July 2, 2 p.m.	Bldg. water system: 2,000,000-gal. reservoir, lay 26,906 ft. distribution mains, 25,465 ft. supply pipes; cost, \$28,000; city to furnish pipes, etc. C. C. Hill, Engr.	S. A. Collins, Boro. Clerk.
Pennsylvania	Albion	July 5	Furnishing 260 tons 6-in. c.-i. water pipe and forty 4-in. Corey steamer fire hydrants, f.o.b. Muskogee.	Chas. Wheeler, Jr., City Clerk.
Oklahoma	Muskogee	July 5	Laying 2,500 ft. 4-in. water main and furn. 4 hydrants.	Geo. B. Sage, City Clerk.
Wisconsin	Spooner	July 5, 8 p.m.	Laying water pipe, auxiliary system, First District.	Board of Works.
California	San Francisco	July 6	Furn. and lay water mains, 48-in., etc., in Bronx; also high-pressure fire mains, in lower Manhattan.	H. S. Thompson, Com. W. S. G. & E.
New York	New York	July 6	Bldg. water main extensions; "see Proposals".	W. J. Johnson, Chm. Bd. Pub. Wks.
Arkansas	Ft. Smith	July 6, 10 a.m.	Bldg. pump station; Parkinson & Dockendorff, La Crosse, Architects.	City Clerk.
Wisconsin	Viroqua	July 7, 6 p.m.	Bldg. clear water conduit, intake and drain.	S. A. Freshney, Sec'y Bd. Pub. Wks.
Michigan	Grand Rapids	July 7, 8 p.m.	Bldg. steel stand pipe, 25 ft. diam., 80 ft. high.	P. D. Woodfin, Town President.
Virginia	Waynesboro	July 8	Sinking an artesian well on Levan ridge, Juab Co.	W. H. Farnsworth, Sec'y Land Bd.
Utah	Salt Lake City	July 8, 10 a.m.	Drilling deep wells; old bids rejected; \$300 check.	Iowa Eng. Co., Clinton.
Iowa	Corydon	July 11, 7:30 p.m.		
BRIDGES				
Minnesota	Taylor Falls	June 24	Bldg. rein. conc. arch bridge over river St. Croix; bidder's plans.	L. P. Wolff, Essex Bldg., St. Paul.
South Carolina	Pickens	June 24	Bldg. 2 concrete piers and 80-ft. steel span near Central.	E. F. Looper, County Supervisor.
Ohio	Cincinnati	June 24	Repairing bridges.	Fred. Dreihls, Clk. Bd. Co. Comrs.
Illinois	Waukegan	June 24	Bldg. 2 concrete culverts on Dugdale road.	B. Kristan, Comr. Hwys.
Illinois	Streator	June 25, 3 p.m.	Bldg. 3 concrete bridges in Cotter township.	Jas. L. Hill, Town Clerk.
Illinois	North Chicago	June 25, 2 p.m.	Bldg. concrete bridge in Shields township.	M. C. Decker, Town Clerk.
Ohio	Cleveland	June 25, 11 a.m.	Bldg. 2 concrete bridges, one culvert and bridge extension.	F. R. Lander, County Surveyor.
Ohio	St. Clairsville	June 27	Bldg. sub. and super. of bridge at Barton; one on Scotch Ridge Pike over Nixon's Run; repair Jug Run bridge over Wheeling creek; rebuild and reinforce abutment to bridge over Little Short Creek.	E. E. Shepherd, County Auditor.
Ohio	Warren	June 27	Building bridge over Yankee Run in Hubbard.	W. R. Carrington, Clerk Co. Comrs.
Pennsylvania	York	June 27, 10 a.m.	Building 40 ft. concr. bridge over Codorus Creek 114 ft. rdway.	W. H. Strine, Clk. Co. Comrs.
Ohio	Niles	June 27	Concrete and stone masonry for bridge on Park ave.	County Commissioners.
Missouri	St. Joseph	June 28	Bldg. 4 concrete culverts and repairing two bridges.	L. M. Stallard, Co. Hwy. Engineer.
Illinois	Danville	June 28	Bldg. rein. concrete arch; cost, \$5,000.	W. E. Wynn, City Engineer.
Manitoba	Winnipeg	June 28, 11 a.m.	Constructing concrete piers, Brown and Brant St. bridge.	M. Peterson, Sec'y Bd. Control.
Pennsylvania	Norristown	June 29	Bldg. retaining and parapet walls and lengthening arches at double-arch bridge at Sprugel's Run.	Jas. Krewson, Chm. Co. Comrs.
Indiana	Evansville	June 30, 10 a.m.	Building two rein. concrete bridges.	Harry Stinson, County Auditor.
Indiana	Anderson	June 30	Bldg. 2 rein. concr. bridges, concr. piers and abutments, 18 and 60 ft., respectively.	A. Smith, County Engineer.
Washington	Spokane	July 1	Bldg. combination bridge at Waverly.	Board of County Commissioners.

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
BRIDGES (Continued)				
South Dakota	Pierre	July 5	Building various bridges.	C. M. Price, County Auditor.
Washington	Stevenson	July 5, 1 p.m.	Bldg. bridge over Little White Salmon river, Sec. 15, Twp. 4.	Bd. of Comrs, Skamania County.
Indiana	Hartford City	July 5	Building 5 culverts in county.	L. W. Daugherty, County Auditor.
Texas	Arcadia	July 5	Bldg. from 50 to 100 wooden bridges.	R. W. Luttrell, Engr. Drain Dist.
California	Templeton	July 6, 10 a.m.	Bldg. steel concrete highway bridge.	H. L. Carpenter, Clk. Bd. Supr.
North Dakota	Fargo	July 6, noon	Building 30-ft. bridge and repair 100-ft. bridge.	A. C. Lewes, Co. Auditor.
Pennsylvania	Franklin	July 7	Bldg. Petroleum bridge at Oil City; stone and concrete sub. and steel superstructure.	Board of County Commissioners.
Ohio	Cincinnati	July 8, noon	Bldg. concrete bridge and widening road.	Fred. Dreihls, Clk. County Comrs.
California	Visalia	July 12	Bldg. rein. concrete conduit and bridges; cost, \$80,000.	Morve L. Weaver, City Engineer.
Indiana	Jeffersonville	July 16, 11 a.m.	Bldg. bridge over Logan creek.	C. W. Kelly, Co. Engineer.
Virginia	Leesburg	July 25	Bldg. rein. concrete or iron bridge across "The Dutchman"; 55-ft. span, 12-ft. roadway, and abutments; also for bldg. bridge over Little River, near Aldie.	I. J. Crim, Chm. Co. Comrs.
Louisiana	Alexandria	July 28	Building creosoted timber frame protection fender on piles.	Ira W. Sylvester, Consulting Engr.
LIGHTING AND POWER				
Illinois	Chicago	June 24, noon	Furn. 6,000 incandescent lamps.	C. L. Hutchinson, Sec'y South Side Park Commission.
California	San Jose	June 27	Building reinforced concrete bridge over Guadalupe Creek.	J. G. McMillan, Co. Surveyor.
Nebraska	Schuyler	June 27	Building wagon bridge over Platte River.	M. F. Shonka, County Clerk.
Oklahoma	Apache	June 27	Furn. material for electric light and water plant, etc.	Town Clerk.
Kansas	Stafford	June 27, 8 p.m.	Rebuilding electric light plant; date postponed indefinitely.	J. R. Mullen, Mayor.
Virginia	Luray	June 27	Lighting streets, 3 or 5 years; price on arc lights, 4 and 6 amp.; incandescent, 16 and 32 c. p.	B. F. Batman, City Recorder.
Ohio	Delaware	June 27	Lighting and heating system for Girls' Industrial School, inc. 30,000 ft. underground cable, 2 add. engines and generators, wire, etc.; cost, \$70,000.	Bd. Trustees, Girls' Indus. School.
Ohio	Cleveland	June 29, 2 p.m.	Building power plant, installing equipment, building tunnel, steam pipe, condenser, etc.	County Building Commissioners.
Oklahoma	Cherokee	June 30, 3 p.m.	Extending electric light system; see adv. June 15 issue.	A. J. Titus, Mayor.
Florida	West Palm Beach	July 1	Constructing electric light plant, etc. Proposal.	G. W. Jonas, Sec'y W. P. B. Imp. Co.
Tennessee	Memphis	July 5	Furn. incandescent gas and gasoline lights, also equipment and maintenance of same.	Ennis M. Douglass, City Clerk.
MISCELLANEOUS				
Missouri	St. Louis	June 24, noon	Furnishing 3,000 rein. interlocking concrete boxes.	W. B. Dryden, Sec'y Bd. Improv.
Iowa	Council Bluffs	June 27	Furn. aerial truck and 1,000 ft. 2 1/2-in. hose.	A. W. Casady, City Clerk.
Pennsylvania	Smethport	June 27, 1 p.m.	Erecting bldg. for juvenile offenders.	A. M. Marsh, Chm. Co. Comrs.
Minnesota	Waltham	June 25, 10 a.m.	Bldg. village lock-up; W. F. Keefe, Architect.	L. C. Chapman, Village Recorder.
Pennsylvania	Philadelphia	June 28, noon	Dredging various docks.	J. F. Hasskarl, Act. Dir. Dept. Docks.
New Jersey	Hackensack	June 28, 11 a.m.	Bldg. three-story jail; J. R. Gordon, N. Y. City, Arch.	Jas. M. Gulnac, Chm. Co. Bldg. Com.
Maryland	Baltimore	June 29, 11 a.m.	Furn. and erect disinfecting plant for Health Commission.	E. D. Preston, Inspector Bldgs.
New York	Buffalo	June 30, 11 a.m.	Bldg. mixing floor and extension of present continuous belt conveyor at Utilization plant.	F. G. Ward, Comr. Pub. Wks.
Ohio	Columbus	June 30, noon	Furn. 25,000 or more sets of auto. number plates.	C. A. Thompson, Sec'y of State.
Colorado	San Francisco	June 30	Building sea wall: 43,000 tons rock, 95 tons structural steel and 6,000 cubic yards concrete.	Harbor Commissioners.
Florida	West Palm Beach	July 1	Hydraulic dredging, 300,000 cu. yds.	Geo W. Jonas, Sec'y W.P.B. Imp. Co
Utah	Salt Lake City	July 1	Bldg. barge and 2 floats and installing thereon dredging machinery to be furnished by city.	H. G. McMillan, Chm. Bd. Pub. Wks.
Illinois	Lake Forest	July 1	Bldg. garbage crematory, double furn., 4 units cap., 12 tons per 24 hrs.; also brick bldg. and chimney, 150 ft. high.	Jas. F. King, City Clerk.
Dist. of Col'bia	Washington	July 1, 2 p.m.	Installing 75-ft. aerial extension ladder, rais. mech. on truck.	C. H. Rudolph, Ch. Bd. Comrs.
Illinois	Rock Island	July 4	Installation of fire alarm system.	M. T. Rudgren, City Clerk.
Indiana	Lawrenceburg	July 5, noon	Building bridge over Hogan Creek.	W. S. Facaly, County Auditor.
Maryland	Ft. Howard	July 5	Bldg. fire station.	Constructing Q. M.
California	Oakland	July 6, 11 a.m.	Furn. fire hose, motor-driven pumping engine and 3 motor-driven comb. chemical and hose wagons.	W. B. Fawcett, Sec'y Bd. Pub. Wks.
Kansas	Hutchinson	July 8, 3 p.m.	Sprinkling 6th ave., one year.	Ed. Metz, City Clerk.
Minnesota	Detroit	July 12, noon	Bldg. jail; C. E. Bell, Tyrie & Chapman, Archts.	E. W. Davis, Chm. Co. Comrs.
California	Visalia	July 12	Bldg. rein. concrete conduit and bridges; cost, \$80,000.	M. J. Byrnes, City Clerk.
Louisiana	Alexandria	July 28	Building creosoted timber frame protection work and bridge fender on pile foundation.	I. W. Sylvester, Consult. Engr.
Mississippi	Natchez	Aug. 3	Sprinkling streets.	W. G. Benbrook, Mayor.

and Oil No. 5, to Utica Sweeping and Contracting Co., 6 2-10c. per gal.

Olyphant, Pa.—Paving contract for River, Susquehanna and Race sts., to Cummings, Johnson & Co., \$16,715.

Benwood, W. Va.—Curbing S. Marshall st., to W. H. McLain, Bellaire, 28c. per cu. ft.

SEWERAGE

Vallejo, Cal.—City Trustees are considering election on \$32,000 bonds for improvements, including better sewer system.

Bristol, Conn.—Board of Wardens and Burgesses has ordered construction of sewers on five streets.

Pensacola, Fla.—Citizens have voted \$100,000 bonds for completing sewer system.

St. Petersburg, Fla.—Bids have been asked for extension of sewer outlet on 7th ave. South into bay; cost \$6,000.

Hutchinson, Kan.—Ordinance has been adopted by City Commission for system of drainage that will cover greater portion of eastern section of city.

Lawrence, Kan.—Council has passed first reading ordinance for issuance of \$10,000 sewer bonds; bids will be asked for sewer on Ontario st.

Kalamazoo, Mich.—City Engineer Johnson has made following estimates: Bryant st. storm sewer, \$1,200; Willard st. storm sewer, \$600; Sanitary zone, \$20,000; Fulford st. sewer, \$15,000; Patterson st., for extension of sewer both at east and west ends, \$10,000; new walls for water works, \$3,000; tall race, 3d st. to Vine st., \$1,500.

Pt. Missoula, Mont.—Maj. A. B. Shattuck, Construction Quartermaster, received no bids for sewer system, water distributing system, 300,000-gal. steel tank and 100-ft. trestle, pumping station, boilers, pumps, valves, etc.; also concrete walks and curb at post.

Dundee, Neb.—Citizens have voted \$39,000 bonds for sewer construction.

Plainfield, N. J.—Citizens have voted \$300,000 bonds for sewage disposal plant.

Niagara Falls, N. Y.—Council has ordered that steps be taken to learn cost of construction and maintenance of plant capable of disposing of city's sewage.

Niles, O.—Bids have been rejected for construction of Mill st. sewer; bids will be readvertised.

Youngstown, O.—Council is considering sewerage of seven streets.

Erie, Pa.—Bids will be asked for sewerage on Cromwell ave. and 22d st.; Council has passed ordinance for construction of two sections of Front st. intercepting sewer.

Milwaukee, Wis.—Council is considering \$30,000 bond issue for sewerage.

CONTRACTS AWARDED

Creston, Ia.—Laying sewer, to Geo. W. Auracher, city, 1,400 ft. 6-in., cut 9 ft., 72 1/2c.; 1,800 ft. 8-in., cut 9 ft., 95c.; 6-in. specials, 35c. each, extra; 8-in. specials, 40c., extra; manholes, 30-in. clear, 4-in. vit. brick walls and 4-in. concrete bottoms, no top, \$3.40 per ft. of depth.

Olyphant, Pa.—Building First Ward trunk sewer, to Pittston Construction Co., \$2,552; Valley ave. sewer, to Flanagan & Co., \$4,649.

Wilkes-Barre, Pa.—Sewer, to John F. Shovlin, city, \$1,453.70 for sewers at Barnum place and Wayne lane; pipe for this work, to George N. McAlarney, \$259.50; concrete drain at outlet of Hendler sewer, to Alfred Hand, \$880.

WATER SUPPLY

Vallejo, Cal.—City Trustees are considering election on \$320,000 bonds for improvements, including improvement of water system.

Hartford, Conn.—Webersfield residents

are urging that city supply water; town has \$25,000 available to lay mains.

Indianapolis, Ind.—Cost of repairing Brightwood water plant and extending water mains has been estimated at \$20,000.

Stafford, Kan.—Time for receiving bids for proposed water works system, to be opened June 27, has been postponed.—J. R. Mullen, Mayor.

Ardmore, Okla.—Oklahoma Inspection Bureau has recommended installation of electric and steam-driven pumps and hydrants, electric hydraulic valve at stand-pipe and additional mains.—C. T. Ingals, Water Works Manager.

Charleston, S. C.—Council has decided that Charleston Light and Water Co. has failed to comply with requirements of contract and refused to grant franchise.

Dallas, Tex.—New bids will be asked for air compressors for wells at two pumping stations.

Murray, Utah.—Citizens will vote on \$20,000 bonds to improve water system; pipe line will be installed from seven artesian wells to outskirts of city.

Salt Lake City, Utah.—Plans will be prepared by City Engineer for high pipe line from City Creek Canyon to northeast bench.

Morgantown, W. Va.—Lockview Land and Water Co. has been incorporated, capital \$100,000, to install water works plant.—Byron W. Rightmire and Ross C. Shriver, Morgantown; Burton B. Rohrbough and James W. Thornhill, Bellington, and Joseph Eakin, Weston, Incorporators.

Milwaukee, Wis.—Council will take permanent steps at early date to purify water supply.—C. J. Poetsch, City Engineer.

CONTRACTS AWARDED

Waterbury, Conn.—Building Morris dam at Wigwam reservoir, to Ryan, Unmack & Co., New Haven, \$528,436.

New York, N. Y.—Construction, delivery and installation of a number of plants at various stations along line of new water supply, to Coldwell-Wilcox Co., Newburgh, \$187,000.

Cottage Grove, Ore.—Construction of water works; cost about \$100,000, to American Light & Water Co., Kansas City, Mo.; work includes 102,758 ft. 12-in. wood water pipe and 100,000-gal. reservoir.

LIGHTING AND POWER

Birmingham, Ala.—Joint Committee of the City Council has recommended to Council that the petition of Providence Oil and Gas Co. for franchise to lay pipes in city be granted.

Vallejo, Cal.—City Trustees are considering election on \$320,000 bonds for improvements, including installation of lighting plant.

Redkey, Ind.—Town Board of Trustees has granted Attorney Haymond of Muncie, who represents an eastern syndicate, franchise to install and operate electric lighting system.

Fort Scott, Kan.—Fort Scott Gas and Electric Co. is planning proposed improvements to be undertaken during the present summer.

Stafford, Kan.—Time for receiving bids for proposed electric light plant, to be opened June 27, has been postponed.—G. A. Mikejell, City Clerk.

Schaefferstown, Pa.—Schaefferstown and Newmantown Electric Light and Power Co.'s and the Landis Electric Light and Power Co., of Richland, have been incorporated to supply this town, Richland and Newmantown with current. John W. Moore, Sheridan; Irwin Horst, city, and T. L. Becker, Milbach, are interested.

CONTRACTS AWARDED

Boston, Mass.—Installation of condensers, etc., at Navy Yard, to John W. Danforth Co., Buffalo, N. Y., \$13,979.

New Hartford, N. Y.—Lighting streets, 26 lights, to Utica Gas and Electric Co., five years, \$50 per arc lamp.

Portsmouth, Va.—Lighting city, to Portsmouth and Norfolk Corporation.

FIRE EQUIPMENT

Birmingham, Ala.—Council has authorized construction of new building for No. 5 and No. 6 Engine companies.

Ardmore, Okla.—Oklahoma Inspection Bureau has recommended installation of additional hose company, auto chemical engine, replacing of tanks on chemical engine, auto combination engine and hose wagon, combination hose wagon and hook and ladder truck.

BRIDGES

Trenton, N. J.—Board of Freeholders will consider erection of bridge across Water Power connecting Riverdrive ave. with Delaware River ave.

CONTRACTS AWARDED

Pekin, Ill.—Constructing bridge over Mackinaw River, at Waltham's Ford, to E. Cooney, Tremont, \$7,988.

Hammond, Ind.—Constructing bridge over Grand Calumet River in Hammond, to Scherzer Rolling Lift Bridge Co., Monadnock Bldg., Chicago, Ill., \$74,904.

Hartford City, Ind.—Constructing two bridges over Salamonie River, as follows: 120-ft. steel structure to Saunders Co., of Muncie, \$6,100, and 100-ft. bridge to Hackdorm Co., Indianapolis, \$5,629.

New York, N. Y.—Contract for test borings for bridge across the Hudson River at two sites, 109th and 179th sts., to Phoenix Constr. Co., 41 Park Row.—Boller & Hodge, 149 Broadway, Engineers.

MISCELLANEOUS

Vallejo, Cal.—City Trustees are considering election on \$320,000 bonds for municipal improvements, including erection of joint city hall and jail.

Louisville, Ky.—Board of Public Works is contemplating purchase of automobile for exclusive use of three Board members.

Elizabeth, N. J.—Council has appropriated \$250 for purchase of ambulance for Isolation Hospital.

Corning, N. Y.—Council has rejected bill recently passed by Legislature giving city permission to issue \$20,000 bonds to build incinerating plant.

Duncan, Okla.—Stephens County will vote on \$75,000 bonds to erect court house and \$12,000 to erect jail.

Salt Lake City, Utah.—Purchase of \$2,550 auto patrol is being urged by Chief of Police.

CONTRACT AWARDED

Fairview, N. J.—Removal of garbage and ashes in borough for period of one year, to Emil Janke, Cliffside, \$511.

PROPOSALS

NOTICE TO CONTRACTORS

Missoula, Mont., June 13, 1910.

Notice is hereby given that the undersigned, at his office in the City Hall, Missoula, Montana, will receive sealed proposals until 5 o'clock P. M., July 11, 1910, for the furnishing of all labor and material for the construction of a system of sanitary sewers in the following special improvement districts: A, A1, A2, AB, AB1, AB2, AB3, AB4, AC, AC1, AC2, AC3, AC4, AC6, AD, AD1, AD2, AD3, AD4, AD5.

Approximate estimate:

Total length of sewers, 40,746 feet.

Excavation and refill, 940 cubic yards solid rock.

Excavation and refill, 4,700 cubic yards loose rock.

Excavation and refill, 88,250 cubic yards earth.

Excavation and refill, 93,890 cubic yards, total excavation and refill.

Embankment, 1,160 cubic yards.

D. S. vitrified pipe, 7,260 feet 8-inch.

D. S. vitrified pipe, 12,610 feet 9-inch.

D. S. vitrified pipe, 5,950 feet 10-inch.

D. S. vitrified pipe, 3,080 feet 12-inch.

D. S. vitrified pipe, 1,950 feet 15-inch.

D. S. vitrified pipe, 1,160 feet 18-inch.

D. S. vitrified pipe, 900 feet 20-inch.

D. S. vitrified pipe, 1,440 feet 24-inch.

D. S. vitrified pipe, 2,750 feet 27-inch.

Junctions, 440 8x6x2½ wyes.

Junctions, 675 9x6x2½ wyes.

Junctions, 300 10x6x2½ wyes.

Junctions, 140 12x6x2½ wyes.

Junctions, 40 15x6x2½ wyes.

Junctions, 60 18x6x2½ wyes.

Junctions, 30 20x6x2½ wyes.

Junctions, 70 24x6x2½ wyes.

Junctions, 35 27x6x3 wyes.

Pipe laying, 8,360 feet 8-inch.

Pipe laying, 14,610 feet 9-inch.

Pipe laying, 6,700 feet 10-inch.

Pipe laying, 3,425 feet 12-inch.

Pipe laying, 2,060 feet 15-inch.

Pipe laying, 1,300 feet 18-inch.

Pipe laying, 980 feet 20-inch.

Pipe laying, 1,621 feet 24-inch.

Pipe laying, 2,865 feet 27-inch.

Manholes, 5-foot diameter, 6; 6 to 10 feet high (brick or concrete).

Manholes, 5-foot diameter, 2; 10 to 14 feet high (brick or concrete).

Manholes, 5-foot diameter, 4; 14 to 19 feet high (brick or concrete).

Manholes, 4-foot diameter, 6; 6 to 10 feet high (brick or concrete).

Manholes, 4-foot diameter, 50; 10 to 14 feet high (brick or concrete).

Manholes, 4-foot diameter, 25; 14 to 19 feet high (brick or concrete).

Flush tanks, 4½-foot diameter, 6; 8 to 12 feet high (brick or concrete).

Flush tanks, 4½-foot diameter, 12; 12 to 16 feet high (brick or concrete).

Flush tanks combination, 1; 9 feet high (brick).

Open conduit (concrete), 520 feet, 27-inch diameter.

Concrete bulkhead, 1; at mouth of Main sewer.

Reinforced concrete bridge, 1; over irrigation ditch.

Lumber, 100,000 feet, board measure.

Plans, specifications and forms of proposal on file in the office of the sewer engineer. A complete set of said plans will be furnished to contractors requesting same upon deposit of the sum of \$20 as a guarantee that the said plans, profiles, specifications, etc., will be returned to the engineer's office in good condition.

The City Council reserves the right to reject any and all bids.

By order of the City Council this 11th day of June, 1910.

(Seal) W. A. LOGAN, City Clerk,
C. W. SWEARINGEN, Engineer.

(25-26)

ATTENTION, CITY OFFICIALS!

Fire engine for sale, No. 3 size standard. A bargain for city or village. Has been thoroughly tested out to entire satisfaction; guaranteed; can also be used in pumping out cesspools, etc. For full particulars and photo, address Box 95, Middlesboro, Ky. (25-26)

CONDUIT, INTAKE AND DRAIN

Grand Rapids, Mich., June 16, 1910.

Sealed proposals will be received at the office of the Board until July 7, 1910, at 8:00 P. M.

For the construction of a Clear Water Conduit, Intake and Drain for the City of Grand Rapids, Michigan, according to the plans and specifications on file at the office of the Board.

Proposals not made in duplicate will be rejected.

The Board reserves the right to reject any and all bids.

Each bidder shall deposit with his proposal a certified check or certificate of deposit payable to the order of Henry J. Klevorn, President, in the sum of 5 per cent of his proposal, but not less than \$50.00, to be forfeited to the City of Grand Rapids in case he shall fail to enter into contract in accordance with his proposal, should his proposal be accepted by the Board of Public Works.

All proposals must be made upon blanks that will be furnished upon application at the office of the Board. By order of the Board.

HENRY J. KLEVORN, President.

Attest: SAMUEL A. FRESHNEY,

Secretary and General Manager.

(25)

WATER WORKS AND ELECTRIC LIGHTING EXTENSIONS

Notice to Contractors

Cherokee, Okla.

Sealed proposals will be received at the office of the City Clerk, Cherokee, Okla., up to three (3) o'clock p. m. of Thursday, the 30th day of June, 1910, for furnishing material and labor and constructing extensions to the water works and electric lighting systems, separate bids being entertained as follows:

1. For furnishing material and labor (except such materials as are separately itemized in this notice) and constructing complete systems of water works and electric lighting; certified check \$1,000.

2. For furnishing f.o.b. cars Cherokee, Okla., two compound duplex steam pumps, 500 gallons capacity; certified check \$100.

3. For furnishing all material and erecting steel tower and tank of 70,000 gallons capacity, 120 ft. high; certified check \$100.

4. For furnishing f.o.b. cars Cherokee, Okla., one Corliss engine for direct connection to 150-kw. alternating current generator mentioned under Division 5 of this notice; certified check \$100.

5. For furnishing f.o.b. cars Cherokee, Okla., one 150-kw., 3-phase, 60-cycle, 2300-volt, alternating current generator, switchboard, transformers and street lighting equipment; certified check \$200.

6. For furnishing material and constructing sanitary sewer outlet, 15-in. vitrified pipe, 18,940 ft. long, 4 to 12 ft. deep; certified check \$1,000.

All of the above material to be furnished and work to be done in accordance with the plans and specifications on file at the office of the City Clerk, Cherokee, Okla., and at the office of the Engineers, Kansas City, Mo.

Any one desiring extra copies of the plans for personal use may obtain the same from the Engineers by making a payment of five (\$5) dollars to cover the cost of the prints.

The city reserves the right to reject any and all bids.

A. J. TITUS, Mayor.

J. W. RACKLEY, City Clerk.

Burns & McDonnell, Engineers,
(24-25) Scarritt Bldg., Kansas City, Mo.

WATER MAIN EXTENSION

Fort Smith, Ark.

Bids will be received by the Board of Public Affairs of the City of Fort Smith, Ark., for the construction of Water Main Extension, at ten o'clock A. M., July 6th, 1910. Plans and specifications on file in City Clerk's Office. Board reserves right to reject any and all bids. Separate bids will be received for Pipes, Specials, Hydrants, etc. Certified check for 10% of amount of bid must accompany each bid.

(24-25)